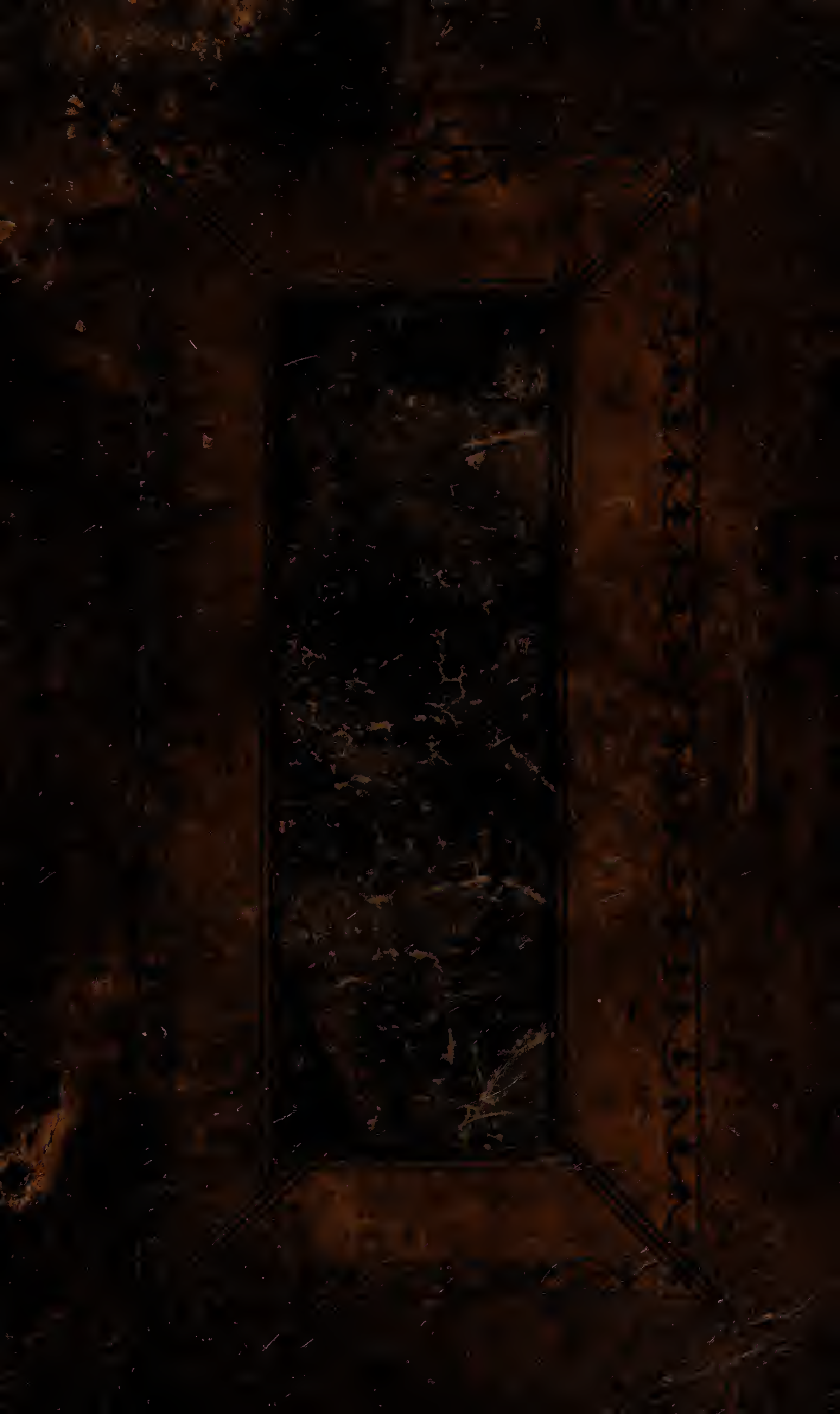

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This book is very interesting since in the Second part Chapter 1st it describes the use of a new invention very closely resembling the Kaleidoscope which Dr. Brewster brought forward as discovered by himself. GHE —

12558

NEW IMPROVEMENTS OF Planting and Gardening.

BOTH

Philoſophical *and* Practical;

Explaining the

MOTION of the SAPP

AND

GENERATION of PLANTS.

With other Diſcoveries never before made Publick, for the Improvement of Foreſt Trees, Flower Gardens, or Parterres; with a New Invention whereby more Deſigns of Garden-Plats may be made in an Hour, than can be found in all the Books now extant. Likewiſe ſeveral rare Secrets for the Improvement of Fruit-Trees, Kitchen-Gardens, and Green-Houſe Plants.

Agite, O Adoleſcentes, & antequam Canicies vobis obrepat, Stirpes jam alueritis, quæ vobis, cum inſigni utilitate, delectationem *etiam adſerent.*

Pet. Bellonius, de neglectâ Stirpium culturâ.

The Third Edition Corrected.

By *RICHARD BRADLEY*, Fellow of the
ROYAL SOCIETY.

LONDON: Printed for W. MEARS, at the
Lamb without *Temple-Bar.* MDCCXIX.

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To the Moſt High, Puiſſant, and Moſt
Noble PRINCE,

HENRY,

Duke, Marquis and Earl of *Kent*, Earl of *Harrold*, Viſcount *Goodrich*, Baron *Lucas* of *Crudwell*, *&c.* Lord-Steward of his Majeſty's Houſhold, Conſtable of *Windſor* Caſtle, and Lord Warden of *Windſor* Foreſt, Lord Lieutenant and *Cuſtos Rotulorum* of the County of *Bedford*, One of the Lords of His Majeſty's Moſt Honourable Privy Council, and Knight of the Moſt Noble Order of the Garter.

My LORD,

YOUR Grace's Generous Encouragement of whatever may advance the Good of your Country, gave me the firſt Thought of inſcribing theſe Papers to your Great Name; and it is with Pleaſure that I mention your Grace's Permiſſion to make Uſe of that Patronage, which my Ambition firſt led me to. I am too well acquainted with your great Attainments in all Kinds of Learning, to offer any conjectural Projects, or vain Hypotheſes, to ſo penetrating a Judgment: Theſe Sheets are the Reſult of many Years Experience, the only Foundation which ſuch accurate Philoſophers as your Grace will allow for the Improvement of Natural Knowledge. It is a great Happineſs, when Men of your exalted Quality, and large Fortunes, honour the Sciences, not only with your Protection, but by being Maſters of them, become their Ornaments. Thus, *my Lord*, You are to our Studies in a Way of Art, what the *Sun* is to the Subject of them in a natural Way, which tho' placed at infinite Diſtance from the *Plants* of the *Earth*, yet by its Influence gives them Warmth, Action, Life and Beauty.

May it pleaſe your Grace,

Inſtead of enumerating the ſeveral Virtues of your Illuſtrious Houſe, and your Own, which the Publick know already, I beg leave to Congratulate my Country upon the Noble Spirit your Grace has always ſhewn in doing it the moſt important Services. The Men of Buſineſs, and the Men of Letter, the *State*, and the *Societies* of Learning, are equally your Debtors. For my own Part, tho' the meaneſt among the latter, I ſhall endeavour, from your Influence, to proſecute the Subject I have here begun, with new Vigour, humbly hoping to approve my ſelf, what I moſt deſire to be thought,

Your GRACE'S

Moſt Obliged and moſt

Obedient Humble Servant,

RICHARD BRADLEY

THE PREFACE.

AS there is no Subject of more General Uſe and Advantage than the Cultivation of Land, and the Improvement of the Vegitable World; ſo there is none which has been treated of more largely, and fell under ſuch a Variety of Pens of all kinds. The Publick, which is generally ſo good Natur'd on this Occaſion as to accept and encourage any Thing that looks towards the bettering their Fortunes, has never been ſo much baulked in their Expectations, as in Books of Agriculture. The Reaſons of which are, that ſome of theſe Writers have beſtowed their Pains in Collecting from Antiquity and foreign Soils, and thought they had perform'd great Matters, by heaping together a *load of Obſervations from* Varro *and* Pliny, *without carefully conſidering wherein their Experiments differ from the Genius of our* Soils *and* Climates: *Others have employ'd their Time in Copying from our old* Engliſh *Syſtems, and theſe have generally tranſcrib'd one another without the leaſt Acknowledgment of their Thefts, or adding one ſingle Improvement to the Knowledge of their Forefathers. And indeed, how ſhould it happen otherwiſe, when the Undertakers of this Subject, have generally been either Covetous or Illiterate* Gardeners *and* Planters; *ſome, that if they knew any Thing New or Curious, had not the Spirit to communicate their Notions; and ſome that jogged on in the old beaten Track, without any Ambition to excel their Predeceſſors. We have now and then, it is true, a* Gentleman *ſtudious and capable of obliging the World, free from the narrow Views of Self-Intereſt, and employing his Hours for a more diffuſive Benefit than the Culture of his own private Eſtate or Garden; an* Evelyn, *a* Nourſe, *and a* Laurence *have given us ſomething equally new, and juſt, built upon Experiment, upon the beneficial Subject of* Plantation.

But what are theſe, when compared to that uſeleſs Number of unimproving Authors!

Apparent rari nantes in gurgite Vaſto.

For my own part, I muſt confeſs that I have been a long time waiting for a Compleat Syſtem *of* Agriculture, *and have read many a fair promiſing Title, but have found nothing within but a barren Bulk of old Repetitions. This has excited me, who from a Natural Bent of Genius, even from my Childhood, have had a Paſſion for* Gardening *and* Planting, *to reduce all my Notions and Obſervations into a regular Form, and endeavrur to ſupply this General, and ſo much lamented Defect of other Writers, I ſhall think without Vanity, that I may do my Country no inconſiderable Service, if I can excite the Nobility and Gentry of the Kingdom to early* Plantations *upon their Eſtates, which I ſhall prove will not only redound to their own private Profit, but the Advantage of the Nation in General. The Diſuſe of this Method was complained of by Mr.* Evelyn, *who ſays very juſtly,* There is no Part in Husbandry, which Men commonly more fail in, neglect, and have Cauſe to repent of, than that they did not begin Planting betimes. *And indeed ſuch Perſons who have been deaf to Demonſtration at the firſt Poſſeſſion of their Eſtates, and are afterwards convinced of the vaſt Advantages to be reaped by an early* Plantation, *either from the Experience of their Neighbours, or themſelves, muſt have a very pungent Retroſpect upon this Occaſion. Every Man is naturally willing to enjoy the Profits of the Works, (as one may call them) of his own Hands, and he therefore who begins at Fifty to be ſenſible that he has loſt many a fair Thouſand, by his neglect of improving his Eſtate between Twenty and his preſent Age, is to himſelf indeed a Loſer, but a Warning to others to avoid that Folly.*

To begin then as methodically as I can, and take in all that relates to this Subject, I ſhall fairly tell my Reader what he is to expect in this Firſt Part, *and I hope he will pardon me if I mix a little Natural Philoſophy, ſuch as is plain, eaſy, and grounded on my own Experience,*

ence, with theſe Obſervations on Gardening *and* Planting.

I ſhall then advance (what I think) a new Syſtem of Vegetation, and endeavour to prove that the Sap *of* Plants *and* Trees *Circulate much after the ſame manner as the Fluids do in Animal Bodies, which may be one Argument to ſhew the beautiful Simplicity of Nature in all her Works.*

The Generation of Plants *will next be conſider'd, and the Manner how their Seeds are impregnated, a Diſcovery which I made ſome Years ſince; this will be of great Uſe to all* Planters, *by directing them in the proper Choice of their Seeds.*

The Difference of Soils will make another conſiderable Article, what are Natural to each Tree, and how all kinds of Soils may be mended, alter'd, or improv'd by proper Mixtures with each other; a part of Husbandry that has, as yet, been but ſlightly touched upon, and yet the Whole depends chiefly upon it.

The Method of Dreſſing Woods, *and making* Plantations *of* Timber-Trees, *naturally follows; wherein I ſhall propoſe a new, eaſy, and Practical way of raiſing* Woods, *with very little Expence, which I hope will take off thoſe Fears which the Generality are taught to conceive of the preſent great Charge of* New Plantations.

And for the further Encouragement of all Gentlemen who propoſe an Advantage from their Woods, *I ſhall add an Eſtimate of the Profits that will ariſe from an Acre of Land planted with* Timber *and* Underwood *in nine Years, ſeventeen Years, and Twenty five Years after Planting, which I ſhall prove will amount to above* 250 l. *beſide the Timber growing.*

Having now laid my Scheme before the Publick, I have nothing more to do than to invite all Gentlemen who are Curious in this Way, to communicate their Obſervations upon any of theſe Heads, and whether they agree with, or contradict my own, I ſhall think my ſelf obliged to do them Juſtice in my following Papers. I can only ſay, that this *is a Subject I have long ſtudy'd and experienc'd; and a ſlight or ſingle Obſervation ought to be no Foundation to build a new Syſtem upon, or overthrow an old one. An Undertaking of this kind, which aims directly at the Good of others, I hope therefore will meet with little Cenſure, and leſs Diſcouragement.*

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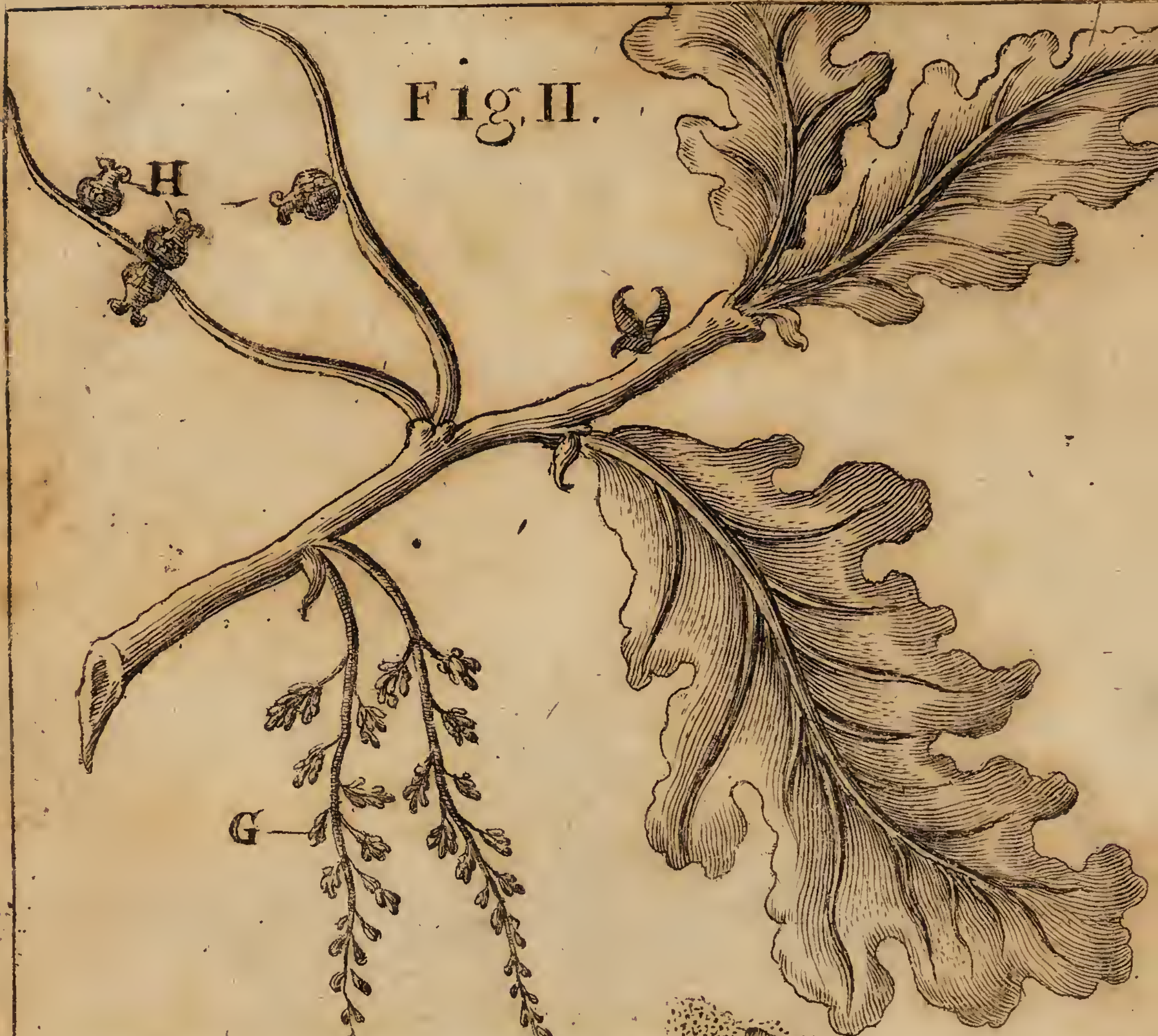
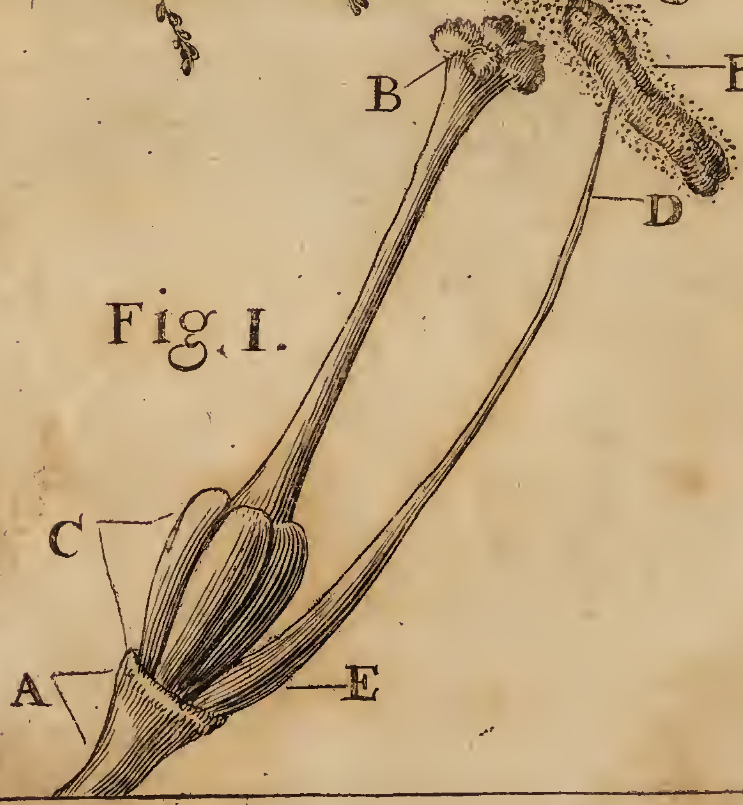


Fig. I.



NEW IMPROVEMENTS OF *Planting* and *Gardening*, BOTH Philoſophical *and* Practical.

CHAP. I.

A Parallel between Plants and Animals; with an Attempt to prove the Circulation of the Sap in Vegetables.

VEgetation, in what-ever Degree I ſhall treat of it, is equally depending on the Order of Nature. Whether I ſpeak of *Trees*, *Shrubs*, or *Herbaceous Plants*, their Principles are equally the ſame; that is to ſay, they all alike draw their Nouriſhment by way of their *Roots*; which Nouriſhment is convey'd through proper Veſſels into the *Stem*, the *Branches*, *Leaves*, *Flowers* and *Fruit*.

Now that I may more eaſily explain by what Means every *Plant* receives and diſtributes its Nouriſhment to the ſeveral Parts of it, give me leave to draw a Parallel between *Plants* and *Animals*, that thereby the Nature of *Plants* may be the better underſtood.

The many curious Obſervations which have been made concerning the Structure of *Animal* Bodies, and what *Malpigius*, Dr. *Grew*, and my ſelf have remark'd in the Structure of *Vegetables*, may aſcertain to us, that Life, whether it be *Vegetable* or *Animal*, muſt be maintain'd by a due Circulation and Diſtribution of Juices in the Bodies they are to ſupport; we have all alike diſcover'd (with the help of *Microſcopes*) the ſeveral Veſſels and other Parts which compoſe a *Plant*; but I cannot agree in Opinion with the Authors I have mention'd, concerning the Courſe of the Juices thro' the Ducts and Channels which we have diſcover'd. It would be needleſs for me in this Place to relate their ſeveral Opinions, which would ſwell this Treatiſe to too great Bulk; their Works may be peruſed by the Curious; I ſhall proceed to explain, that the *Sap* circulates in the Veſſels of *Plants*, as the *Blood* doth in the Bodies of *Animals*.

And that this new Syſtem may be the better underſtood, I think it proper in this Place to give a ſhort Deſcription of the Veſſels in *Plants*, and their Situation. Firſt then the *Root* of a *Plant* is of a ſpungy Nature, ready to admit into it ſuch humid Particles as are fitted (in the Earth, by a certain Temperature of Air) to be received into its Pores: And we may obſerve that the various Qualities of different *Plants* depend chiefly on the different Size of the Veſſels and Pores in their *Roots*, by which they receive their ſeveral Nouriſhments.

Secondly, We muſt underſtand that the Wood of every *Plant* is compoſed of Capillary Tubes, running Parallel with each other, from the *Root* (upright) through the *Trunk* Their Cavities are ſo ſmall that they are hardly to be diſcern'd by the natural Eye, unleſs in a Piece of *Charcoal*, *Cane*, or *Oaken Board*: Theſe Veſſels renew and augment themſelves every Year, as we may obſerve by cutting a *Tree* horizontally, which will diſcover to us the Latitudinal Shootings, and the Annual Additions of theſe Pipes, and for which Reaſon the *Trunks* of *Trees* increaſe in their Circumference. Theſe Tubes for Diſtinction ſake I ſhall call *Arterial Veſſels*. For it is through theſe the *Sap* riſes from the *Root* in fine *Vapour*; for their Cavities are ſo ſmall, that it would be impoſſible they ſhould admit any thing whoſe Parts were ſo large as thoſe of a *Liquor*.

Thirdly, The Paſſages, or Pipes, by which the *Sap* returns downward, are much more open than the former, and are capable of receiving a Liquor into them; theſe are plac'd immediately on the Outſide of the *Arterial Veſſels* between the *Wood* and inner *Bark*, and lead down directly to the Covering of the *Root*. They perform the Office of *Veins*, and contain the liquid *Sap* which is found in *Plants* in the Spring and Summer Months.

Fourthly, The *Bark* of a *Tree* is of a ſpungy Texture, and by many little Strings which paſs between the *Arterial* Pipes, correſponds with the *Pith*. And,

Fifthly, The *Pith* is compoſed of little tranſparent Globes chain'd together in like manner with thoſe Bubbles which compoſe the Froth of any Liquor.

In fine, a *Plant* is like an *Alimbeck*, which diſtils the Juices of the Earth; as for Example.

The *Root* having ſuck'd in the Salts of the Earth, and fill'd it ſelf with proper Juices for the Nouriſhment of the *Tree*; theſe Juices then are ſet in Motion by Heat, that is, they are made to evaporate into *Steam*, as the Matter in a Still will do when it begins to warm; now as ſoon as this *Steam*, or *Vapour*, riſes from the *Root*, its own Natural Quality carries it upwards to meet the Air; it enters then the Mouths of the ſeveral *Arterial Veſſels* of the *Tree*, and paſſeth up them to the Top, with a Force anſwerable to the Heat that puts it in Motion; by this Means it opens (by little and little, as it can force its way) the minute Veſſels which are roll'd up in the *Buds*, and explain them by degrees into *Leaves*.

But as every *Vapour* of this kind when it feels the Cold will condenſe and thicken into a Water, ſo when the *Vapour* which I mention to riſe thro' the *Arterial Veſſels* arrives at the extream Parts of them (*i. e.*) the *Buds* of a *Tree*, it there meets with Cold enough to condenſe it into a *Liquor*, as the *Vapour* in a Still is known to do.

In this Form it returns by means of its own Weight to the *Root* down the *Veſſels*, which do the Office of *Veins*, lying between the *Wood* and inner *Bark*; leaving, as it paſſeth by, ſuch Parts of its Juice as the Texture of the *Bark* will receive, and requires for its Support.

It may be wonder'd at, that I have not taken more Notice of the *Pith* which has been always accounted the principal Part of a *Tree*; to which I ſhall only anſwer at this Time, that many *Herbaceous Plants* have not any *Pith*, and that I have ſeen the *Trunks* of large *Trees* deſtitute of it, and they have yet continued to grow and to bear *Fruit*, ſo that the Order of *Vegetation* may be explain'd without it; and indeed was I here to take Notice of the ſeveral Particulars in *Plants*, I might ſwell this Treatiſe into a large Volume; but I am clearly of the ſame Opinion with him that ſaid, μέγα βιβλίον μέγα κάκον; and therefore ſhall confine my ſelf in this Work to ſuch Relations only, as I hope may be uſeful.

But to proceed: The following Experiment of the moſt Ingenious Mr. *Lawrence*, which he has mention'd in his *Clergyman's Recreation*, relating to the Jeſſamine, may convince us of the Certainty of the *Sap's* Circulation in *Plants*. I ſhall give it in his own Words, “ Suppose a plain *Jeſſamine-Tree* ſpreading “ it ſelf into two or three *Branches* from “ one common *Stem* near the *Root*. Into any one of theſe *Branches*, in *August*, inoculate a *Bud* taken from a yellow ſtrip'd *Jeſſamine*, where it is to “ abide all Winter, and in the Summer, “ when the *Tree* begins to make its “ Shoots, you will find here and there “ ſome *Leaves* ting'd with Yellow, even “ on the other *Branches* not inoculated,

" till by Degrees, in ſucceeding Years, " the whole *Tree*, even the very *Wood* of " all the tender Branches, will be moſt " beautifully ſtrip'd and dy'd with Yellow " and Green intermix'd: *He adds*, that " tho' the inoculated *Bud* ſhould not ſhoot " out, or that it ſhould live but two or " three Months, and after that happen to " die or be wounded by Accident, yet even " in that little Time it will have communicated its Virtue to the whole *Sap*, " and the *Tree* will become entirely " ſtrip'd." And this Experiment my ſelf and ſeveral others have made ſeveral Years ago; which gave me the firſt Hint of the *Sap's* Motion, and put me upon further Enquiry; it may, I hope, ſatisfy the Curious.

The Motion of the *Sap* continues in a *Plant* ſo long as the Sun's Warmth can keep it in a fluid State, but is condenſed or thicken'd by a Winter's Cold, and is thereby changed into the Conſiſtency of Gum, and being thus ſtagnated, cannot move any more till the Warmth of the following Spring, or ſome artificial Heat rarifies it into its former liquid State.

It then renews its former Vigour, and puſhes forth *Branches*, *Leaves*, &c. But we muſt not ſuppoſe it is only the melted *Sap*, that was thicken'd in the Tree during the Winter, which does that Office of *Ger-*

mination, the *Root* has not been idle while the *Branches* have ſtood ſtill, it has not loſt the Moiſture of the preceding Autumn to impregnate and furniſh itſelf with proper Salts or Nouriture, from whence the *Tree* is to be maintain'd. Here is a Supply laid in to furniſh Food for the Summer, as ſome induſtrious Animals lay up their Store to nouriſh themſelves in the Winter.

In the next Place it may not be amiſs to confute a common Opinion, *That the* Sap *returns to the* Root *in Winter*; for if it did ſo, how comes it that *Trees* which are cut down in *November* and *December* will put forth *Branches* and *Leaves* the following Spring, altho' they have no *Root* or Earth to feed them? This plainly ſhews that the *Sap* is condenſed or thicken'd in the *Tree* during its Circulative Courſe by extream Cold, and remains in that gummy State, till the Warmth of the Spring (as I have already ſaid) liquifies it, and by the *Vapour* which muſt then ariſe from it, the *Buds* are puſh'd forth, ſo long as there is Matter remaining in the Trunk ſufficient to furniſh them.

And now ſince it appears from what has been ſaid, that *Plants* have a Circulation of *Sap* and proper Means whereby to ſupply themſelves with *Food*, let us conſider whether *Plants* in their ſeveral Kinds do not require different Sorts of *Food* one from the other, like various Sorts of *Animals* which differ in their *Dyets.*

Firſt then, *Land Animals* may be liken'd in general to thoſe *Plants* which are call'd *Terrene*, for that they live only upon the Earth, ſuch as *Oaks*, *Beech*, *Elm*, *&c.*

Amphibious Animals, ſuch as the *Otter*, *Beaver*, *Tortoiſe*, *Froggs*, &c which live as well on the Land as in the Waters, may be compared to the *Willow*, *Aldar*, *Minths*, and ſuch others.

The *Fiſh Kind*, or *Aquatick Race*, whether of the *Rivers*, or the *Sea*, are analogous to the *Water Plants*, ſuch as *Water Lillies*, *Water Plantains*, &c. which only live in *Rivers*, or *Freſh Water*, or the *Fucus*, *Coral*, *Coraline*, &c. which are Sea or Salt Water *Plants*; and not any one of thoſe will live out of its proper Element. From whence we may conclude how improper it would be to plant a *Water Lilly* in a dry ſandy Deſart, or an *Oak* at the bottom of the Sea, which would be juſt as unreaſonable, as if we ſhould propoſe to feed a *Dog* with *Hay*, or a *Horſe* with *Fiſh*; however, this Rule of Nature has been ſo little obſerv'd, even by ſome of our greateſt *Planters*, that we can hardly boaſt of good Succeſs in one out of five *Plantations* that has been made.

But I ſhall beg Leave to remark yet further, That as the ſeveral *Land Animals* have their reſpective *Dyets*, ſo have the *Terrene Plants* likewiſe their ſeveral *Soils* from whence they draw their Nouriſhment; as ſome *Animals* feed on *Fleſh*, others on *Fiſh*, *Roots*, *Leaves*, *Grain* or *Fruits*, ſo do we find that ſome *Plants* love *Clay*, others a *Loam*, *Sand*, or *Gravel*, &c. Nor is this all we ought to obſerve, we muſt conſider likewiſe how beneficial to every *Plant* is a right Expoſure, whether in a *Vale*, the Sides or Tops of *Hills*, expoſed to the *South* or *North* Winds, whether inland, or near the Air of the *Sea*; for it is a proper *Air* that keeps a *Plant* in Health, and fits it to receive its Nouriſhment, and a certain Degree of *Warmth*, peculiar to each kind of *Plant*, is likewiſe worth our Enquiry, for it is a *Warmth* natural to each *Plant* that puts its *Juices* in their proper Motion, as the ſame Degree of Heat will not melt every kind of Mixture, but this may be more fully explain'd in another Place; in the mean while I ſhall proceed to examine, in the next Chapter, by what Means *Plants* are capable of *Generating*, and to explain the Uſes of that Diſcovery.

CHAP. II.

Of the Generation of PLANTS.

IN the 'foregoing Chapter I have given my Reader ſuch Hints as may ſerve to explain my *Syſtem of the Circulation of Juices in Vegetables*, and have endeavoured to ſhow that *Plants* are ſomewhet analogous to *Animals*; I ſhall now proceed to offer another Diſcovery, as new as the former, and depending on it, which I conceive will be of extraordinary Uſe to ſuch as raiſe Plantations from *Nutts*, *Maſt*, or any other kind of *Seed* or *Grain*. And altho' in this Treatiſe I have propoſed to give ſome Directions tending only to the Improvement of *Foreſt* and *Timber Trees*, yet I hope to be excus'd, if in the Explanation of this wonderful Myſtery of the *Generation of Plants*, I ſhall be forced to introduce ſuch kinds of *Plants* as are not to be found in *Foreſts*, and to make ſome of my Experiments in the *Orchard* or *Kitchen-Garden*.

Moſes tells us in his Account of the *Creation*, That *Plants have their Seeds in themſelves*; that is, every *Plant* contains in it ſelf Male and Female Powers; the Text he has given us, ſeems to be explain'd by this Diſcovery, and may lead us to conſider that *Plants* wanting *local Motion*, require therefore this Union of *Sexes* in themſelves, by which Means they may generate without the Neighbourhood of other *Plants*; they are in this reſpect like *Muſcles*, or other immovable Shell-fiſh, who are *Hermaphrodites* of this kind, having their Propagation without the help of one of the ſame Species. I mention *Muſcles* and other immovable Kinds of *Shell-Fiſh* as a particular kind of *Hermaphrodite*, for thoſe which have local Motion, ſuch as *Snails* and *Earth-Worms*, when they couple with one another, at once perform the *Male* and *Female* Act of *Generation*.

But before I proceed to explain this new Syſtem, I think my ſelf obliged to declare that the firſt Hint of this Secret, was communicated to me ſeveral Years ago by a worthy Member of the *Royal Society*, *Robert Balle*, Eſq; who had this Notion for above Thirty Years, that *Plants* had a Mode of *Generating* ſomewhat analogous to that of *Animals*. The Light which I received from this Gentleman was afterward farther explain'd by another Learned Member of that Society, Mr. *Samuel Moreland*, who in *Philoſ. Tranſ.*

Numb. 287, *Anno* 1703. has given us to underſtand how the *Duſt* of the *Apices* in *Flowers* (*i. e.* the *Male Sperm*) is conveyed into the *Uterus* or *Vaſculum Seminale* of a *Plant*, by which Means the *Seeds* therein contain'd are *impregnated.* I then made it my Buſineſs to ſearch after this Truth, and have had good Fortune enough to bring it to Demonſtration by ſeveral Experiments; ſince which, a Gentleman of *Paris* has printed ſomething of the ſame Nature in the *Hiſt de l' Acad. de Sciences*, for the Years 1711 and 1712, which were publiſh'd about two Years ago.

But to come to the Point, the *Lilly* being a Flower more generally known than any other, and its Generative Parts being large and expoſed, I ſhall from thence endeavour to explain the Method which Nature makes uſe of to impregnate the *Seeds* of that and every other *Plant*, and by which Means the ſeveral *Species* of *Vegetables* have been continued to the World.

The *Flower* of the *Lilly* has ſix *Leaves* or *Petols*, which are ſet on upon the Summit of the *Footſtalk*, mark'd A in the firſt Figure, they ſerve to guard the Parts of Generation from the Injuries of the Weather, and as they are of no other Uſe that I know of, ſo it is not neceſſary that I ſhould place them in the Figure.

B is the Mouth of the *Piſtillum* or Paſſage which leads into the *Uterus C*, in which are three *Ovarys* fill'd with little *Eggs* or *Rudiments* of *Seeds*, ſuch as we find in the *Ovaria* of *Animals*, but theſe *Eggs* will decay and come to nothing, unleſs they are impregnated by the *Farina Fecundans* or *Male Seed* of the ſame *Plant*, or one of the ſame ſort.

From *D* to *E* is a *Stamen* of the *Lilly*, through which the *Male Seed* of the *Plant* is convey'd to be perfected in the *Apex F*, where, by the Sun's Heat, it ripens and burſts forth in very minute Particles like *Duſt*; ſome Particles of which *Powder* falling upon the Orifice *B*, is either convey'd from thence into the *Utricle C*, or by its magnetick Virtue draws the Nouriſhment with great Force from the other Parts of the *Plant* into the *Embrios* of the *Fruit*, and make them *ſwell*.

Now that the *Farina Fecundans*, or *Male Duſt*, has a Magnetick Virtue, is evident; for it is that only which *Bees* gather and lodge in the Cavities of their hind Legs to make their *Wax* with; and it is well known, that *Wax*, when it is warm, will attract to it any light Body. But again, if the Particles of this *Powder* ſhould be requir'd by Nature to paſs into the *Ovarys* of the *Plants*, and even into the ſeveral *Eggs*, or *Seeds*, there contained, we may eaſily perceive, if we ſplit the *Piſtillum* of a *Flower*, that Nature has provided a ſufficient Paſſage for it into the *Uterus*.

In the firſt Figure I have only given a Deſign of one *Stamen* with its *Apex*, to prevent Miſtakes in my Explanation, but the *Flower* of every *Lilly* has ſix of the ſame Figure and Uſe, which are placed round about the *Piſtillum*, or Female Parts; ſo that 'tis almoſt impoſſible it ſhould eſcape from receiving ſome of the *Male Duſt* (or *Farina Fecundans*) falling upon it.

In this and other *Flowers* of the like Nature the *Piſtillum* is always ſo placed, that the *Apices* which ſurround it, are either equal in Height with it, or above it, ſo that their *Duſt* falls naturally upon it. And when we obſerve it to be longer than the *Apices*, we may then conjecture that the *Fruit* has begun to form it ſelf, and has no longer Occaſion of the *Male Duſt*. And it is likewiſe obſervable, that as ſoon as this Work of *Generation* is performed, the *Male Parts*, together with the *Leaves*, or *Covering*, fall off, and the *Pipe* leading to the *Uterus* begins to ſhrink.

We may further remark, That the top of the *Piſtillum* in every *Flower*, is either cover'd with a ſort of Velvet Tunic, or emits a gummy Liquor the better to catch the *Duſt* of the *Apices*.

And now as we may find in the Deſcription I have given of the *Lilly*, that the *Uterus* is within the *Flower*; ſo on the other Hand the *Uterus* of a *Roſe* is without the *Flower*, at the bottom of the *Petals* or *Flower-Leaves*. And likewiſe in *Fruit-Trees*, the *Cherrys*, *Plums*, and ſome others, have their *Utricles* within their *Flowers*, and the *Gooſberry*, *Currant*, *Apples* and *Pears*, on the outſide or bottom of their *Flowers*. But farther, altho' Nature has deſign'd the *Duſt* of the *Apices* to fecundate the *Female Parts* contain'd in the *Flowers* of *Plants*; yet we obſerve that in ſome *Plants* the *Male* and *Female Parts* are remote from each other; as for Example, the *Gourd*, *Pumkin*, *Melon*, *Cucumbbr*, and all of that Race, have *Bloſſoms* diſtinctly *Male* and *Female* upon the ſame *Plant*. The *Male Bloſſoms* may be diſtinguiſhed from the others, in that they have not any *Piſtil* or Rudiment of *Fruit* about them, but have only a large *Thrum* cover'd with *Duſt* in their middle; the *Female Bloſſom* of theſe has a *Piſtillum* within the *Petals*, or *Flower Leaves*, and the Rudiments of their *Fruit* always apparent at the bottom of the *Flower* before it opens; and ſo in like manner all *Nut-bearing*, and, I think, *Maſt-bearing Trees* have their *Catkins* or *Male Bloſſoms* remote from the *Female Parts.*

The *Oak* for Example, which bloſſoms in *May*, has its *Male Parts* diſtinct from the *Acorns*, we find Strings of little *farinaceous Flowers* in great abundance, as in the Second Figure, mark'd *G*, remote from the Rudiments of the *Acorns* or *Fruit* mark'd *H:* And ſo likewiſe in the *Walnut*, *Cheſtnut*, *Hazel*, *Pine*, *Cypreſs*, and even the *Mulberry*, *Aſpen*, and others. I have obſerv'd that ſome Sorts of *Willows* change their Sex every Year, by producing only *Male Bloſſoms* or *Katkins* one Year, and the Year following *Strings* of *Female Bloſſoms*, which if they then happen to be near enough ſome *Flow'ring Male*, will produce *Seeds* not much unlike thoſe of an *Apocinum.*

When we view with a good *Microſcope* the *Male Duſt* of one ſingle *Plant*, we find every Particle of it to be of the ſame Size and Figure, but in ſome Caſes, it is of two Colours, as in the *Tulip*, where it is Yellow and Blue; but as *Plants* differ from one another in their Figures and Qualities, ſo are the Figures of their ſeveral *Duſts* greatly different from each other; a Grain of the

Duſt of *Geranium Sanguineum, Maximo flore* of *C, B, P*, is like a Bead of a Necklace with a Hole thro' it.

The *Farina* of the *Corona Solis perennis Flore & Semine Maximus. Hort. Lugd. Bat.* is a Globe ſet with Thorns; that of the *Ricinis Vulgaris, C, B, P*, is of the Figure of a Grain of Wheat.

And the *Acer Montanum Candidum* of *C, B, P*, affords a *Duſt* of the Figure of a Croſs; and in like manner does the *Farina* of every *Plant* differ in its *Shape* from the reſt.

The Female Parts of *Generation* in *Plants* are beſt ſeen in large *Fruits*, without the Trouble of the *Microſcope*; ſuch as the *Fruit* of the *Pumpkin* or *Melon*, where with the Natural Eye we may diſcover the *Veſſels* diſtinctly which make the *Tunick* or *Covering* of each *Ovary*; we may ſee how the *Seeds* are joyn'd to it, and by what End they receive their Nouriſhment. And again, between the ſeveral *Ovarys* encloſ'd in that *Fruit*, we may very eaſily perceive the *Vagina*, or Paſſage through which the *Farina Fecundans* has paſs'd to impregnate the *Seeds*.

It may perhaps be objected, that there are many *Flowers* which hang downwards, as the *Crown Imperial*, the *Cyclamen, &c.* and that their *Piſtils* cannot receive the *Farina Fecundans* upon them; but if we obſerve that the *Piſtils* of theſe *Flowers* are always more prominent, or ſomewhat longer than the *duſty Apices* which ſurround them, we may eaſily conceive that the glutinous Matter and Velvet Covering on the Extremities of the *Piſtils*, may be capable enough of receiving and holding ſome of the *Powder* as it falls; and whether the Intromiſſion of the *Farina Fecundans* be requiſite or not, its Lodgment on the Mouth of the *Piſtillum* may, by vertue of its attractive Quality, perhaps fecundate the *Seeds* contain'd in the *Uterus*; I am ſure in the Production of *Animals* there are yet greater Difficulties to encounter with; and it may be, if the *Analogy* between *Plants* and *Animals* was more enquir'd after by the Learned, they might diſcover many new Things which would be ſerviceable to the Preſervation and Benefit of *Animal Bodies*, as this Knowledge will be to the Improvement of the *Vegetable World*. We find, for Example, that *Trees* are generally longer liv'd than *Animals*, ſome of them living to four or five Hundred Years; nay, we have ſome Accounts, by Tradition, of *Trees* that have liv'd above 2000 Years; the Reaſon I think is plain, for that, *Firſt*, *Trees* have no Senſation (for it is my Opinion, that the *Senſes* prey abundantly upon the *Juices* of the *Body* they belong to). *Secondly*, They always breathe the ſame Air; And, *Thirdly*, they feed always upon the ſame ſimple *Diet*. And Mankind, who in the firſt Times is ſaid to have lived upwards of 900 Years, is ſaid to have fed upon a *Simple Diet*, and to have drank of the *clear Stream*; at leaſt he had then but little Variety of Food. But I hope my Reader will pardon this Digreſſion of mine, it may perhaps put him upon greater Diſcoveries.

I ſhall now proceed to what I call the *Demonſtrative Part* of this *Syſtem*. I made my firſt Experiment upon the *Tulip*, which I choſe rather than any other *Plant*, becauſe it ſeldom miſſes to produce *Seed*. Several Years ago I had the Conveniency of a large Garden, wherein there was a conſiderable Bed of *Tulips* in one Part, containing about 400 Roots; in another Part of it, very remote from the former, were Twelve *Tulips* in perfect Health, at the firſt opening of the Twelve, which I was very careful to obſerve, I cautiouſly took out of them all their *Apices*, before the *Farina Fecundans* was ripe, or any ways appear'd; theſe *Tulips* being thus *caſtrated*, bare no Seed that Summer, while on the other hand, every one of the 400 *Plants* which I had let alone produced *Seed*.

But as a farther Demonſtration that *Plants* generate after the manner I have endeavoured to account for it, I ſhall recommend to my Reader the following Experiment. Make choice of ſuch a *Plant* of the *Hazel* or *Philbud*, as you find to be in a bearing State, and far diſtant from any other of the ſame Sort; this *Tree* in *January* puts forth what are commonly call'd *Catkins*, which are long *Thrums*, compos'd of very ſmall *Flowers*, that towards the beginning of *March* are cover'd with a fine *Duſt*, or *Male Seed*; 'tis then the *Bloſſoms* or *Female Parts* appear on the *Buds* of the ſame *Tree*; they are very ſmall, and hardly to be diſcern'd without ſtrict Enquiry, only offering to the View a ſmall Cluſter of *Scarlet Threads*, which are ſo many *Tubes* leading to the Rudiments of the *Nuts*; this happens at a windy Seaſon of the Year, that the *Male Duſt* may be more eaſily convey'd to the *Utricles* or *Female Bloſſoms* of the *Plant*. Now as ſoon as the *Catkins* appear, they muſt be carefully taken from the *Tree*, and it will produce no *Fruit* that Year, unleſs you have a mind to ſingle out any particular *Bloſſom* of it, which may be impregnated with *Catkins* from another *Tree*, gather'd freſh every Morning for three or four Days ſucceſſively, and duſted lightly over it, without bruiſing its tender

Fibres:

Fibres: And in like manner may the *Bloſſoms* of any other *Tree* or *Flower* be caſtrated, and will have the ſame Effect.

By this Knowledge we may alter the Property and Taſte of any *Fruit*, by impregnating the one with the *Farina* of another of the ſame Claſs; as for Example, a *Codlin* with a *Pairmain*, which will occaſion the *Codlin* ſo impregnated to laſt a longer Time than uſual, and be of a ſharper Taſte; or if the *Winter Fruits* ſhould be fecundated with the *Duſt* of the *Summer Kinds*, they will decay before their uſual Time; and it is from this accidental Coupling of the *Farina* of one with the other, that in an *Orchard* where there is Variety of *Apples*, even the *Fruit* gather'd from the ſame *Tree*, differ in their Flavour and Times of ripening, and moreover the *Seeds* of thoſe *Apples* ſo generated, being changed by that Means from their Natural Qualities, will produce different kinds of *Fruits* if they are ſown.

'Tis from this accidental Coupling that proceeds the Numberleſs Varieties of *Fruits* and *Flowers* which are rais'd every Day from *Seed*. The yellow and black *Auriculas*, which were the firſt we had in *England*, coupling with one another, produced *Seed* which gave us other Varieties, which again mixing their Qualities in like manner, has afforded us by little and little, the numberleſs Variations which we ſee at this Day in every curious *Flower-Garden*; for I have ſaved the *Seeds* of near a hundred plain *Auriculas*, whoſe *Flowers* were of one Colour, and ſtood remote from others, and that *Seed* I remember to have produced no Variety; but on the other hand, where I have ſaved the *Seed* of ſuch plain *Auriculas*, as have ſtood together, and were differing in their Colours, that *Seed* has furniſh'd me with great Varieties, different from the *Mother Plants*. I believe I need not explain how the *Male Duſt* of *Plants* may be convey'd by the Air from one to another, by which this *Generation* and *Production* of new *Plants* is brought about; but I ſhall hint by the bye, to ſuch as plant *Orchards* for *Cyder*, that they ought to plant only one Sort of *Apple* in thoſe Orchards; and that ſuch Plantations be likewiſe remote from other Kinds of *Apples*, whoſe *Farina* would elſe certainly ſpoil the *Cyder Fruit*, by ripening ſome ſooner and others later, which would occaſion almoſt a continual Ferment in the Liquor, and never permit it to ſettle or grow fine.

Moreover, a Curious Perſon may, by this Knowledge, produce ſuch rare Kinds of *Plants*, as have not yet been heard of, by making choice of two *Plants* for his

Purpoſe, as are near alike in their Parts, but chiefly in their *Flowers* or *Seed-Veſſels*; for Example, the *Carnation* and *Sweet-William* are in ſome reſpects alike, the *Farina* of the one will impregnate the other, and the *Seed* ſo enliven'd will produce a *Plant* differing from either, as may now be ſeen in the Garden of the ingenious Mr *Thomas Fairchild* of *Hoxton*, a *Plant* neither *Sweet-William* nor *Carnation*, but reſembling both equally, which was raiſed from the *Seed* of a *Carnation* that had been impregnated by the *Farina* of the *Sweet-William*. Theſe Couplings are not unlike that of the *Mare* with the *Aſs*, which produces the *Mule*, and in regard to *Generation*, are alſo the ſame with *Mules*, not being able to multiply their *Species*, no more than other Monſters generated in the ſame manner.

We may learn from hence, that the *Fruit* of any *Tree* may be adulterated as well by the *Farina* of one of the ſame Sort, which perhaps may be ſickly and of a Dwarf Kind, as by the *Duſt* of ſome other Kind near a-kin to it, and worſe than it ſelf. Now as ſuch Couplings may be very frequent in common *Woods*, ſo would I recommend the Choice of *Seed*, to be made only from ſuch *Plants*, or *Timber-Trees* as excel in Greatneſs or other good Qualities, and are far diſtant from others of meaner Sorts, which might degenerate their *Seeds*, and croſs our Expectations when they come to grow up; and this is as neceſſary to be obſerved among *Vegetables*, to maintain their good Qualities in the young *Plants* they are to produce, as it is in the Breeding of *Game-Cocks*, *Spaniels*, or *Running-Horſes*.

There is but one ſort of *Plant* that I know of, which ſeems to be out of this Danger of coupling with other Sorts, and conſequently of either improving or diminiſhing the Qualities of its *Seeds*, and that is the *Miſletoe*; the Parts of its Flowers are indeed as apt to Generation as thoſe of other *Plants*, but I have never ſeen any Variety of this *Plant*, or do I know any other nearly enough related to it to *engender* with it; for whether we find it growing upon the *Oak*, *Willow*, *Lime*, or any other *Tree* whatever, the *Leaves*, *Flowers*, and *Fruit*, with its manner of *Growth*, are all alike. And ſince I have had Occaſion to mention it in this Place, give me leave to take Notice of ſome Particularities belonging to it, as that it is neither to be propagated in *Earth* or *Water*, but upon *Trees* and *Plants* only. The Ancients made it a *Superplant*, peculiar to the *Oak*, and tell us, that altho' it ſeemingly produced *Seed*, they did not believe that that *Seed* could poſſibly be made to *vegetate*, becauſe I ſuppoſe they have try'd it in the *Earth* without Succeſs. But as it is ſo frequently found growing on other *Trees*, beſide the *Oak* in our Times, I ſhall take occaſion at once to overturn their Opinion in relation to this *Plant*, by ſhewing how it may be *propagated* from *Seed* upon any *Tree* whatever. About *Chriſtmas*, when the *Berries* are ripe, they may eaſily be made to ſtick upon the ſmooth *Bark* of any *Tree* you have a mind to *propagate* them upon, whether it be the *Oak*, *Aſh*, *Elm*, *Apple*, *Pear*, *Plum*, *Roſe*, *Gooſeberry*, or *Currant*, &c. The *Viſcous Juice*, which encompaſſeth each *Seed*, will bind it faſt to the Part you place it upon, and with this ſmall Trouble you may expect young *Plants* the following Year, provided the Birds don't devour the *Seeds* you have ſown, therefore a Net would do well to ſecure them. I have ſeen twenty *Plants* of *Miſletoe* growing upon as many different Sorts of *Trees* and *Shrubs* in one Garden, which were *propagated* in the ſame manner I have mentioned. And I believe it would be very uſeful in correcting the too great Vigour of ſome *Fruit-Trees*, and bring them to bear, by taking from them the *ſuperabundant Juices*, which are always deſtructive to *Prolificity*, either in *Plants* or *Animals*.

And now from the Account I have given of the *Generation* of *Plants*, it appears that double *Flowers* ſeldom bear *Seed*, becauſe the *Duſt* of the *Apices* is too much crowded with the *Petals*, or *Flower-Leaves*, which for that Reaſon cannot eaſily reach the *Style* or *Piſtil* of the *Flower*, which is always prominent, and above the *Petals*, in full *Flowers*. It appears likewiſe, that the natural Properties of *Fruits* or *Seeds* may be changed by accidental coupling with other *Plants*; and that the *Seeds* ſo alter'd, may rob us of our Expectations in *Planting*, by having their Principles debauch'd by the *Duſt* of *diſtemper'd* and *degenerated Plants*. I could ſtill add many other Remarks relating to this Diſcovery, and give my Reader a more ample Deſcription of the *Generative Parts* of *Vegetables*, as I have obſerv'd them with the beſt *Microſcopes*; but I conceive I have ſaid enough to explain what I propoſed upon this Head, and ſhall therefore now proceed to offer ſuch Experiments as I have made relating to *Soils*, and endeavour to ſhew how they may be mended, alter'd, and improv'd, chiefly by proper Mixtures with each other.

CHAP. III.

Of SOILS *proper for the Nouriſhment of* PLANTS, *and Compoſts for forwarding the Growth of* PLANTS.

IF *Plants* in their ſeveral Degrees draw from the *Earth* ſuch *Aliment* as is proper for their Subſiſtence, and that as the Nouriſhment they receive is more or leſs ſuitable to them, ſo they proſper accordingly; we may then reaſonably infer that there is a Circulation of *Sap* in *Vegetables*, in ſome reſpect like that of the Blood in *Animals*, as I have already endeavour'd to ſhew in my firſt Chapter of this Tract. For in *Animals* it is very certain, that a *Diet* is required by them for their Subſiſtence, and that a *Diet* being concocted, is the Matter from whence the Blood is drawn; and that as the Blood is, ſo is the State of the Body, either healthful or diſtemper'd; then it reaſonably follows, that we ought as carefully to provide wholeſome and natural Nouriſhment for the Welfare of each reſpective *Plant* we deſign to *propagate*, as we uſually do the proper *Food* or *Diet* of every *Animal* we have a mind to nouriſh. The Food of *Land Animals* is of three Kinds only, *viz. Fleſh*, *Herbs*, and *Seeds* or *Fruit.* So likewiſe the *Food* of *Terrene Plants* is of three ſorts, *Sand*, *Loam*, or *Mother-Earth*, and *Clay*, in their ſeveral Degrees; and as the ſeveral Kinds of *Fleſh*, the various Tribes of *Herbs*, and the many different *Fruits* have each their reſpective *Animals* to feed upon them, ſo *Sand* in its ſeveral Degrees, *Loam* of different Sorts, and *Clays* of all Kinds, have certain Proportions of *Salts* in each of them, proper for the Nouriſhment of every *Plant*.

Fruit or *Seeds* I eſteem to be the *medium Nouriſhment* between *Fleſh* and *Herbs*, and we find that every Land *Animal* will feed upon it, altho' their natural *Food* is either *Fleſh* or *Graſs*; as for Example, a Horſe, whoſe proper Food is Graſs, will eat Grain, and ſo Dogs and other Creatures who feed upon Fleſh, will eat Fruit. And I am of Opinion that the *Salts* therefore in *Fleſh*, *Fruit* and *Herbs*, are the ſame, only differing in the Proportions of their Quantities; that is, one Ponund Weight of *Fleſh* may perhaps contain twice as many *Salts* as the like Weight of Grain or Seed, and one Pound of *Grain* twice the Quantity of Salts that may be found in a Pound of *Herbs* or *Graſs*. Now that all theſe *Salts* are proper for *Vegetation*, is evident by the common Practice of burying *Straw*, or *Litter*, *Brakes*, *Hulm*, and ſuch like, to enrich ſome *Soils* : Again, if *Fruits* and *Grain* be well conſumed, one Load of it laid upon a Spot of Ground, will enrich it more than ten Load of Horſe-Litter, or Common Dung, ſays Sir *Hugh Platt* from Experience, and we are very ſenſible of the prodigious Effect of *Carion*, *Leather*, or any Parts of *Animals* apply'd to the Roots of *Vegetables*.

So on the other Hand, in Natural Soils, what I call *Loam*, or *Mother Earth*, I ſuppoſe to be the *Medium* between *Sand* and *Clay*, that is an Earth of a certain Temperature, partaking equally of them both. And indeed all *Soils* that I know of, may be reduced under theſe three general Heads, *viz.* *Sand*, *Loam* and *Clay*; for all others, altho' they may bear different Names, are in ſome reſpect depending upon one or other of theſe. *Gravels*, and all the open *Soils*, till we come to the *Loam* I mention, are of the *ſandy* Race; and the binding *Earths*, from *Loam* downwards, till we come to the Stiffneſs of Chalk it ſelf, may be ranged with the *Clay* Kind. I find all theſe *Soils* are alike tending to *Vegetation*, and have their *Salts* proper for it, but in different Proportions of Quantity; that is a Peck of *Clay* has perhaps twice as much *Salts* in it as the ſame Quantity of *Loam*, and that Quantity of

Loam twice as many *Salts* as the ſame Proportion of *Sand.* Now from this Argument of mine, it may ſeem at firſt View, that *Clay* is the moſt proper *Soil* to forward the *Growth* of *Plants*; whereas we know that *Sand* is much more apt to produce *Plants* quicker than any other *Soil*; but give me leave to explain this Paradox: *Clay*, whoſe Parts are cloſely wrought together, will not eaſily give out thoſe *Salts* contained in it; neither can the tender *Fibres* of every Plant make their Way thro' it, in ſearch of their Nouriſhment; but if we open its Parts, by digging and breaking it into ſmall Particles, and keep thoſe Parts open by a Mixture of ſome ſharp Sand, or other Body of the like Nature, we ſhall not fail to ſee the Effects of its Vigour.

On the other Hand, *Sand* is apt to puſh forward the *Plants* growing upon it early in the Spring, and even will cauſe them to *Germinate* near a Month ſooner than the *Plants* growing upon a *Clay*; the Reaſon is, that the *Salts* in the *Sand* are at full Liberty to be raiſed and put in Motion upon the leaſt Approach of the Sun's Warmth: But then as they are haſty in their Work, ſo are they ſoon exhaled and loſt.

The *Clay* has certain *Plants* growing upon it, which are natural to it, and conſequently thrive better in it than in any other *Soil.*

And the *Sand* likewiſe has its natural *Plants*, which delight in it, and will not equally proſper in any other *Earth.*

However, both the *Clay-Plants*, and thoſe of the *Sand*, will grow in the *Loamy Soil* I have mention'd, becauſe it partakes of the Qualities of *Sand* and *Clay*, as Grain doth of *Fleſh* and *Herbs*, in reſpect to the *Food* of *Animals.*

I might here take Notice that the Word *Loam* is variouſly receiv'd and underſtood by *Planters:* Some mean by it the moſt common ſuperficial *Earth* met with in *England*, without any regard to the Proportions it bears of *Sand* and *Clay*. Others would have it more inclining to *Clay* than *Sand:* However, I ſhall endeavour to avoid all Diſputes that might ariſe concerning it, by once more repeating, that when I ſhall have Occaſion to mention it, I mean only that Degree of *Earth* which equally partakes of *Sand* and *Clay.*

This *Earth* then, which I call *Loam*, may either be of a black, or yellow Colour; but let it be either the one or the other, Experience ſhews us that *Plants* of all Sorts will grow in it, and for the Reaſons I have before mention'd, it appears to be a more beneficial *Soil* to *Plants* than any other, whereever it happens to be found.

Now, as I take it, ſeeing that *Loam* is ſo happy in its Productions, that even *Plants* naturally bred in different *Soils* will thrive in it, it then ſeems reaſonable, that if by Mixtures of *Natural Earths* one with the other, we make ſuch a Compoſt as may nearly imitate it, we may expect far greater Succeſs from a Mixture of that Sort (eſpecially in *Plantations* of durable *Trees*) than from any Compoſition we can deviſe to be made with *Dungs*, or other forcing Ingredients. For it is very well worth our Remark, that *Animals*, and *Vegetables* alſo of all Sorts, are more laſting, as they are fed by ſimple and natural *Diets*, as I have hinted before. It is true, *Hot-Beds*, or any other Means of the like Nature, would indeed forward the *Growth* of *Trees* perhaps as much in one Year, as Nature of her ſelf would do in ſix: Or as Dr *Agricola* of *Ratisbone* pretends by his artificial Compoſt to raiſe *Foreſt-Trees* to exceed the Height of twenty Foot in a few Days time; but we may be aſſured they can never laſt out half their Days, for we find the ſame in *Animals*, but particularly in *Mankind*, who by Exceſs of unnatural *Foods*, and invigorating *Liquors*, ſhortens his Life; while on the other Hand, ſuch Men as have bare Subſiſtance, and are forced thro' Neceſſity to live upon the natural Food of their own Country, are long-liv'd; I therefore would adviſe, as well from what I have ſaid, as from the Obſervations and Inquires I have made of the *Growth* of *Timber-Trees*, that they may not be forced by any violent Means, if we deſign them to laſt long, and improve themſelves to be valuable; neither to take them from a Nurſery of rich Ground, and expoſe them afterwards in ſuch *Land* where they may want the ſame plenty of Nouriſhment they have been uſed to; for then they would certainly decline and deceive us. Let the Earth we deſign to plant them in be freſh and well open'd in its *Parts*; and if it ſhould be ſifted, it will help the ſtriking of young *Roots* at firſt Planting, and ſupport them 'till they can gather *Strength*.

I think I need not further explain, that equal Quantities of *Sand* and *Clay* well mix'd together will afford us the deſirable *Soil* we ſeek after, in Caſe the *Loam* or *Mother Earth* I mention, cannot conveniently be met with. But this has its greateſt Uſe, when we make new *Plantations*, for we ought alſo to examine the Depth of the *Soil* underneath, into which our *Trees* are afterwards to puſh their *Roots*, and from whence they are to draw their chief Nouriſhment, and that may be beſt known from Obſervation; that is by examining the moſt vigorous *Trees* of every Kind, and obſerving the *Qualities* and *Depths* of the *Soils* they feed from, and from ſuch Examples, to make our *Plantations* accordingly; we ſhall then find that an *Oak* will never make good *Timber*, if it be *planted* or *ſown* upon a ſhallow Rocky *Soil*, and at the ſame time that an *Aſh* will grow there; but this I ſhall more fully explain in the next Chapter of *Foreſt Trees.*

And now ſeeing that ſome delight more in the quick *Growth* of the *Trees* they plant, than the Advantages which would accrue to their Families, from a regular and natural *Growth* of their *Plantations*, I ſhall mention ſome *Mixtures* which have been experienced to forward the *Growth* of *Trees.*

Mixture the Firſt. If the *Soil* be ſtiff inclining to *Clay*, let it be well broke and open'd, of which take about five Load, add to it an equal Quantity of *Heath Turfs* burnt, let theſe Ingredients be well mixed and ſifted, or skreen'd together, after they have lain for a Winter in a *Heap* or *Ridge*. This Compoſt will forward *Trees* extreamly.

Second Mixture. To four Load of *ſtiff Soil* broke and open'd as before, add as many Load of *ſharp Sand*, to which put two Load of the *Aſhes* of *burnt Furzes*, *Gorſe*, *Fern*, *Weeds*, or *Wood*; let this be well mix'd together about *September* or *October*, and be laid up in a *Ridge* 'till the *February* following, to be ſkreen'd or ſifted for Uſe. Sir *William Bruce*, a Gentleman of *Scotland*, made uſe of the like *Mixtures* in his Garden, with the Succeſs he deſired.

Third Mixture. One Load of *rotted Wood*, ſuch as may be found under a Wood Pile, or for want of that, the ſame Quantity of *rotted Leaves.* To either of theſe add a Load of *burnt Graſs Turf*, two Load of *Sand*, and the like of *ſtiff Soil*, this Compoſition muſt be well mix'd and laid in a *Ridge* from *October* 'till *February*, and be ſifted for Uſe. *N. B.* Theſe artificial *Soils* ſhould always be compos'd about *October*, and ſifted the following Spring, juſt before you uſe them; for if you ſhould prepare them in the Spring, the Summer's Heat would exhale their *Volatile Spirits*, and beſides, *Weeds* would be apt to rob them of their Nouriſhment, unleſs they were to be made in ſome ſhady Place under *Trees.*

Fourth Mixture. Take the Quantity of a Load of *Rape Seeds*, after the *Oil* is preſs'd from them, which may be very eaſily had at the *Rape Mills* at a ſmall Expence; add to them two Load of *Sand*, one of *ſtiff Soil*, and one of burnt *Heath*, or *Graſs Turf*, prepared as the others, and ſifted, will greatly forward the *Growth* of any *Plant.*

Fifth Mixture. Take one Load of *Malt Grains* (after Brewing) add to it two Load of *Sand*, and two of *ſtiff Soil*, mix'd and prepared as before, it will make an incomparable Compoſt to haſten the *Growth* of *Plants.*

Sixth Mixture. Sheeps-Dung, with a like quantity of *Wood-Aſhes*, and twice as much *Loam*, or *Mother Earth*, prepared as before, will greatly forward the *Growth* of *Herbs* and *Trees.*

Seventh Mixture. Take of *Horſe-Dung* well conſumed, two Load; add to it one Load of *Turf Aſhes*, two Load of *Sand*, and two of *ſtiff Earth*, prepare this *Mixture* as before, and it will greatly forward *Germination* of *Plants:* But if *Sea-Coal Aſhes* are more eaſily found, put them in the Place of the burnt *Turf* and then add one Load more of *ſtiff Earth* to the Compoſt.

And now beſides the ſeveral Compoſitions which I have ſet down, I might add thoſe which I have known to have been prepared with the *Soil* of *Poultry*, that feed upon Corn or Grain. I found thoſe Ingredients very hot and full of Salts, greatly tending to *Vegitation*, and abundantly quicker in their Operation, than the *Soil* of *Animals*, which only feed upon *Herbs*; but that is no great Wonder, if it be true what Sir *Hugh Platt* ſays, that one Load of Grain will enrich Ground more than ten Load of common *Dung*, and alſo from what I know from Experience, and have mention'd in the Fourth and Fifth *Mixtures* preſcrib'd in this Chapter. Now if ſimple *Grain* by Infuſion only (if I may ſo term it) in the *Mixtures* or *Compoſts* I have directed, has a good Effect, we may eaſily imagine how much more powerful it will be when it has paſs'd through the Bodies of *Animals*. I could ſay much more upon this Head, but as it is my Deſign to be as ſhort as may be convenient, and purpoſing chiefly in this Treatiſe to contribute ſuch Experiments as may tend to the Improvement of *Plantations* of *Foreſt-Trees*, I ſhall not here enlarge upon *Soils*, but leave ſome Particulars for another Work, and ſum up this Chapter, with two or three ſhort Remarks, firſt that a *Preparation* of natural *Soils* anſwerable to the *Loam* or *Mother Earth* I have mention'd, is certainly the beſt for all Sorts of *Foreſt Trees* to be *planted* or *ſown* in, if we deſign them to make good Timber; and if it is rather deſired that ſuch *Trees* ſhould grow quick, and conſequently be ſubject to decay early, or be prejudiced by *Blights*, I have made mention of ſuch forcing *Compoſts* as will ſet them forward in their *Growth*; but in my Opinion might be better employ'd in Gardens for the Production of ſhort-liv'd *Plants*.

CHAP. IV.

Of TIMBER-TREES *and* UNDERWOOD, *and of Dreſſing and Cleaning of Woods.*

AS there is nothing which contributes more to the *Honour*, *Beauty*, and *Welfare* of an Eſtate, than timely and ſufficient *Plantations* of *Timber-Trees*, ſo I have choſe to make the *propagating* of *Timber* my preſent Subject, and what I have ſaid in the former Chapters may, I hope, contribute ſomething towards our Succeſs in the Undertaking, which will greatly contribute to the Welfare of every Man of Eſtate, if it be rightly underſtood: For altho' a Gentleman may perhaps be poſſeſs'd of a plentiful Fortune, ſuppoſe of 10000 *l. per Annum*, he ought certainly to conſider, that in proceſs of Time he muſt provide Fortunes for Children out of that Eſtate, proportionably to his Honour, and again, his Children muſt likewiſe make farther Proviſions out of their ſeveral Parcels for their Iſſue, and ſo on, 'till at length, in ſix or ſeven Generations, we ſhall find the paternal Eſtate cut to Pieces into ſo many little Shares that there will hardly remain any Idea of the plentiful Stock of their Anceſtors. Now I ſay, it would certainly be a Token of great Wiſdom, for every Gentleman of Fortune, not only to conſult all proper Means how to maintain the Bulk of his Eſtate entire, but continue it ſo in his Line, wiſely guarded againſt the Hazards of Fortune, and even the natural Conſequences I mention, by timely and neceſſary *Plantations* upon it, which would be ſo many Monuments of his Wiſdom, and improving Treaſuries for the good of his Poſterity: And beſides how beneficial would ſuch *Plantations* be in Caſe of extraordinary Accidents, the Profuſeneſs of a young Heir; the Diſcovery of Iron or Lead Mines, where Wood is of ſuch extraordinary Uſe; or for the raiſing a Sum of Money upon any Emergency: I may add likewiſe, beſides the private Intereſt of the Proprietor, it would be of general Uſe, and for the Nation's Good. How happily is *England* ſituated for Trade, what Benefits doth ſhe receive from her Shipping, and therefore how profitable and uſeful is her *Timber*, which will yet become more valuable than ever, in that ſo much is continually cut down, and very little Care taken to make new Plantations for future Benefit. In a Word, the preſent State of *Timber* in *England* is ſo very inconſiderable in reſpect to the great Uſe made of it, and even that which remains growing is generally ſo much neglected in its Culture, that I hope ſome Direction for its Improvement, may not be unacceptable to the World.

The *Trees* which have been commonly propagated in *England*, for *Timber*, are the *Oak*, *Aſh*, *Beech*, *Elm*, *Cheſnut* and *Walnut*; theſe are of the upper Claſs, and we may add to them the *Ilex* or *Evergreen Oak*.

Of the lower Rank for *Underwood*, or more indifferent Uſe, are the *Hazels*, *Alders*, *Willows*, and ſome others of leſs Note.

The *Oak*, like all other *Plants*, has its Varieties, which are taken Notice of by the *Botaniſts*. I have obſerv'd about five Sorts in *England*; but I ſhall only recommend two Kinds of them to be planted for *Timber*. The firſt and beſt, in my Opinion, is the *upright Oak*, which grows more erect than any other; and the ſecond is the *large ſpreading Oak*. We have many Inſtances of theſe Kinds, that have attain'd to ſuch prodigious Greatneſs of Stature, that the Timber alone of one Tree has been ſold for upward of 50 *l.* The *Oak* doth not only afford us the moſt ſerviceable *Timber* for Naval Architecture, but alſo for other Building. Its *Bark* is uſeful to *Tanners*, and the *Oak* is therefore cut down about *April*, when its *Bark* will peel. The *Acorns* are excellent Food for Hogs. This *Tree* delights in moiſt Ground of a good Depth, and will proſper in the coldeſt *Clay*; and, as Mr. *Evelin* ſays, in Gravel alſo. It is noted likewiſe, that ſome *Oaks* having been ſown in Hedge-Rows, have in the Space of thirty Years born a *Stem* or *Trunk* of a Foot Diameter. I have my ſelf ſeen ſome ſeedling *Oaks* of twenty Years Growth of near that Subſtance, which had never been removed from the Place where they were ſown; and I would adviſe, that every Plantation of *Oaks* be ſet from *Acorns* on the very Spot where they are to remain, and that we are likewiſe careful to chuſe our *Acorns* from thriving vigorous Trees, for the Reaſons I have before mention'd; the Diſtance between them ought to be about 33 Foot, and the ſaid Space between the *Oaks* ſhould be interſown or planted for *Underwood*, as I ſhall direct in the following Chapter.

Of the *Aſh* there are two Sorts (falſely diſtinguiſh'd by the Names of *Male* and *Female*) which moſt deſerve our Care in that they are quick Growers, and riſe to a prodigious Stature; beſides theſe there are ſeveral other Kinds which are not worth our Notice. So that we ought to be careful in the Choice of the *Keys* or *Seeds* we deſign to ſow, I have heard of *Aſh*-Trees of 40 Years Growth from the *Seed*, that have been ſold for Twenty five Pounds a Piece, which have grown on Plains in light *Earth*, not very deep: And Mr. *Evelyn* tells us, that one Perſon planted ſo much of this ſort of *Timber* in his Life-time as was valued worth Fifty thouſand Pounds to be bought, which he juſtly remarks was very good Encouragement for a ſmall and pleaſant Induſtry. The *Keys* of this *Tree* are ſowed about *October*, or elſe may be laid at that time in *Sand*, *S. S. S.* 'till the following Spring, and then ſown. The *Timber* of the *Aſh* is uſed for Ploughs and Axel Trees, Wheel Rings, Oars, and many other Mechanick Works; and if we propagate the *Aſh* for *Underwood* only, it will turn to good Account for Hoops and Hop Poles. It may be cut about *February*.

The *Beech* delights in Mountains. In *Berkſhire*, on the Chalky Hills, this Tree is very proſperous, and attains a conſiderable Stature; its Timber is uſed about Keils of Ships, and many Implements of Huſbandry; it is the moſt common *Fire-wood* of *England*, eſpcially about *London*, where Billets are uſually burnt. Among the Coal Pits near *Newcaſtle upon Tine* this Wood is much uſed to make Cart Ways, where for many Miles the Wheels of the Coal Waggons run upon it, which ſaves the Expence of Horſe Fleſh. This Wood will remain Sound for many Years in thoſe marſhy Lands, and is much eſteem'd for that uſe. From the *Seed*, which is call'd *Beech Maſt*, the *French* have long ſince drawn a very ſweet *Oil* for eating, and lately the ſame has been practiſed in *England*. This *Seed* is likewiſe good to feed *Deer*, *Hogs* and *Fowl*; it may be ſown about *October*, or put in *Sand* like the *Aſh-Keys*, 'till Spring, the better to preſerve it from *Vermin*. The Timber may be cut as the former.

We have many Sorts of *Elm* frequent in *England*, among which the *Vulgar* or *Mountain Elm*, is counted the beſt for *Timber*; I ſhall therefore recommend this *Sort* to the Planter, before all others. It may be propagated from the *Seed*, or *Samera*, which ripens and falls from it towards the latter End of *April*, or beginning of *May*, it muſt then be ſown in fine ſifted *Earth*, or what I call *Loam* in the 'foregoing Chapter. This *Seminary* muſt be made in a ſhady Place, and water'd from time to time, as the *Earth* begins to dry; but beſides this way of raiſing *Elms*, we may either propagate them from *Layers*, or *Suckers*; which laſt muſt be tranſplanted into *Beds* of fine *Earth* about the beginning of *March*, and kept well water'd. And ſo naturally is the *Elm* inclined to *Vegetation*, that I have heard ſome affirm, by ſowing only the *Chips* of it in a Piece of plow'd Ground, they have rais'd a large Quantity of theſe Trees, which perhaps is not impoſſible; for I am aſſured in other Caſes the *Buds* and *Leaves*, nay the very *fibrous Roots* of *Plants*, have been made to *vegetate* and produce Trees; as for Example, the ſingle *Leaves* of *Oranges* have been made to ſtrike *Root*, and produce *Branches*, *Leaves*, *Flowers*, and *Fruits*, by ſetting them half way in the *Earth*; and Mr. *Fairchild* of *Hoxton* has done the like with *Leaves* of the *Lauruſtinus*; however, let us raiſe our *Elms* which way we will, I ſhall adviſe that they be not planted out of their firſt *Beds* till they have ſtood there two Years; and then remove them to greater Diſtances from each other, and let them ſo remain 'till you plant them out for good, at about twenty Foot diſtance, in *Beds* of the ſifted *Loam* directed; they grow quick, give a fine Shade, and afford valuable *Timber*; and if the *Witch Elm*, or *Dutch Elm*, be grafted upon this Kind, we may expect them to make *Shoots* of above eight Foot long in one Year, and produce *Leaves* of an extraordinary Bigneſs, but the Wood will then be not ſo valuable. This Tree delights in an *Earth* competently fertile, neither too dry or ſandy, or too cold and ſpungy; nor does it require a deep *Soil.* Let it be moderately refreſhed with Water after *Planting*; and to keep the *Earth* about the *Roots* more open, and ready to receive Wet, cover the *Bed* it is *planted* in with rotted *Fern*, or other ſuch like Matter. A Year or two after *Planting* you may refreſh the young *Fibres* at the Extremities of the *Roots*, with ſome fine ſifted *Earth*, or any one of the four firſt *Mixtures* mentioned in the 'foregoing Chapter, which will make the Tree ſhoot prodigiouſly, for that they contain *Vegetative Salts* in great Abundance. The *Timber* of this *Tree* is very ſerviceable, eſpecially where it may always lye wet, it will laſt a long time; it is mightily uſed for Pipes, Pumps, Mills, and ſuch Parts of Ships as lye conſtantly under Water; in a Word, it is almoſt of general Uſe. The Time of Felling it is from *November* to *February.*

We have two Kinds of *Cheſnut* in *England*, that which bears *edible Fruit*, and the other which is call'd the *Horſe-Cheſnut*: The firſt of theſe Trees affords good *Timber*, and the latter is only deſirable for its pleaſant Shade and beautiful Flowers: Theſe *Trees* may both be raiſed by ſetting the *Nuts* about three Inches deep, in a light ſandy *Soil*, towards the latter End of *February*, or beginning of *March*; but as the firſt only is uſeful, ſo I ſhall chuſe to recommend it to the *Foreſter.* It delights in high Grounds remote from Water, which would ſpoil both its *Timber* and *Fruit*, and ſhould indeed be ſet from the *Nut*, where it is always to remain, for it's apt to ſuffer greatly by removing, and ſpread too much in its Branches, when it loſes its *Tap-root*, as all other *Tap-rooted* Trees are known to do. Its *Timber* is laſting if it be kept dry, and good for Building; and if it be planted for *Underwood*, it will afford excellent Poles and Stakes in nine Years after ſowing, worth at leaſt 10 *s.* per Hundred: The *Fruit* is ſometimes uſed at our Tables, but more commonly given to *Deer* and other Cattle to fatten them. We may fell this *Tree* any time between *November* and *February*.

Among the *Botaniſts* there are reckon'd many ſorts of *Walnuts*, two only of which I ſhall recommend to the *Planter*, *viz.* That with the *ſoft Shell* for the ſake of the *Fruit*, and that with the black *Grain* for the Goodneſs of its *Timber*; they are both rais'd from the *Nuts* like the *Cheſnut*, and ſhould like them be ſown in the Places where they are to remain. They are in great danger of Death, if they loſe their *Tap-root*, but will thrive extreamly if they have Depth of Earth to ſtrike into. The *Walnut* grows well in *Loam*, but will flouriſh alſo in *Chalk* or gravelly *Soil*, either on hilly Ground or in a Vale, which (I think) ſhews it to be a foreign *Plant*; for as I have obſerv'd, every *Plant* natural to *England*, has a *Soil* and *Expoſure* peculiar to it ſelf, and will ſcarce be made to grow in any other ſort of *Land* or *Situation*. I have ſeen ſome *Walnut* Trees of forty Years *Growth* from the ſetting of the *Nuts*, that were valued at Five Pounds a Piece, and others ſtanding by them, which were Trees planted at the ſame time (as the Owner himſelf informed me) that were not worth Thirty Shillings a Tree; and the like Obſervation has been made of other *Tap-rooted* Trees, but particularly the *Oak*; ſo great is the difference of *Growth* in downright rooted *Plants*, when they are ſet from *Acorns* or *Nuts*, and *tranſplanted* from the *Nurſery*. The *Timber* is much uſed for Chairs, Cabinets, and Houſhold Furniture; it is durable, and an Enemy to Worms, from its exceeding Bitterneſs. The *Nuts* yield abundance of Oil, and take Place among the beſt *Fruits* for the Table. This *Tree* may be cut down when the *Sap* is fix'd, *i. e.* from *November* to *February.*

The *Ilex*, or *Evergreen Oak*, is a *Plant* which produces admirable *Timber*, but is more particularly valuable for its *Knee Timber*, which is much tougher than that of our *Engliſh Oak*; it is in ſuch Requeſt among our Ship-Carpenters, that many Ships lading of it has been brought to *England.* The *Tree* is of quick *Growth*, and will attain to a very conſiderable Height, even to equal the talleſt of the *Engliſh Oaks*, to which Perfections we may alſo add the Beauty of its *Leaves*, which are green all Winter.

That curious Gentleman *Robert Balle*, Eſq; *F. R. S.* has, among other Improvements for the Good of his Country, propagated a large Parcel of theſe *Trees* at *Mamhead* in *Devonſhire*, ſome of which have in about 30 Years Space, grown to a conſiderable Greatneſs of Stature. And it is to be wiſh'd that others would follow his Example in the Culture of this beautiful and profitable *Tree.* This Gentleman has rais'd ſome Thouſands of them from *Acorns*, and tranſplanted them with Succeſs and great Judgment; and to follow his Method, we muſt ſet the *Acorns* in *Loam* well ſifted, in Garden Pots about *February*, and turn them out with the Earth about their *Roots*, when they are two Years *Growth*, to tranſplant them afterwards at proper Diſtances, where they are to remain. Theſe, like our *Engliſh Oaks*, are *Tap-rooted*, and therefore delight in deep *Soil*, they proſper in moiſt Land, rather on a Plain than on Hilly ground. If we conſult the *Anatomy* of *Plants*, we ought to be very careful not to injure their *Tap-roots*, which are always anſwerable to the *leading Shoot* on the *Top* of the *Tree*; it is therefore reaſonable to believe, that a *Plant* by loſing of that *down-right* Root, is in Danger of loſing alſo the *Top-Shoot*, which is fed from it. And altho' a Tree may ſtrike freſh *Roots* after the *Amputation* of this *leading Root*, yet we may find by Experience, that the *Sap* will then puſh forth *Branches* in the Sides of the *Stem*, and diſcontinue its upright *Growth*. We may fell this *Tree* as we do the other *Oak*, for the ſake of its *Bark*, the *Acorns* are good Food for *Deer*, and *Fowl*, which greatly delight in the Shelter of theſe *Trees*.

Having mention'd the moſt valuable *Trees* for *Timber*, I am in the next Place to take Notice of ſuch others as will afford us the moſt valuable Crops of *Underwood*. I have already obſerv'd that the *Aſh* and *Cheſnut* may be order'd in this Manner, and bring conſiderable Returns to the Proprietor. The next which I ſhall propoſe for this Uſe, is the *Hazel*; which if it be rightly managed will turn to good Account in *Coppices*. This *Plant* may be raiſed from the *Nuts* ſown a little after they are ripe, in cold, dry, ſandy Ground; but if the *Land* happens to be more inclin'd to *Clay*, plow it in *Autumn*, and let it mellow with the Froſts 'till *February* before you ſow them. The Learned adviſe that after the *ſeedling Plants* are come up, they ſhould be weeded or hough'd, ſo as to leave the *Plants* at three Foot diſtance from each other, and after three Years *Growth*, to cut them off within half a Foot of the *Ground*, by which Means they will be made to ſhoot forth many *Twiggs* from each *Stem*, which in nine Years time (*i. e.*) twelve from putting in *Seed*, will be fit to cut for Hop-Poles, Hoops, Fagots, and other ſuch Uſes; but if you rather chuſe to uſe them for Hurdles, then they may be cut at five Years *Growth*. After the firſt cutting, you may cut again in ſeven or eight Years, if they like the Ground, for Poles and Hoops as before, and ſo continue to do from time to time, as you ſee Occaſion. But theſe *Trees* may be likewiſe propagated by *Suckers*, which are frequently found growing about the *Roots* of old Trees, but are not very certain in their *Growth*, after tranſplanting, unleſs they are carefully water'd till they have ſtruck good Roots. In a Plantation of this Kind, which may be made at any time between *October* and the beginning of *March*, when the Weather is open, theſe *Suckers* muſt be ſet at three Foot diſtance, and cut down within half a Foot of the Ground about the beginning of *April* following; or they may alſo be propagated by laying down their *Branches* or *Twiggs* about three Inches in the Earth, which will furniſh us with abundance of young *Plants* in a Year's time. This Work muſt be done about *October*.

The next I ſhall treat of is the *Willow*, an *Amphibious Plant*. There are many Sorts of it diſtinguiſh'd by the *Botaniſts*, which ſhould I mention here by their ſeveral Names, I might perhaps perplex my Reader, and ſhall therefore only mention them as two Kinds, firſt the *Oziers*, which afford Twigs for the Basket-makers, and binding Rods, and ſecondly the Tree kind, or *Withy*.

Firſt then the *Oziers*, which afford us *Twiggs* for *Wicker-works*, are raiſed by ſetting *Slips* of two or three Years *Growth* about a Foot deep in marſhy or wet *Ground*, at two Foot diſtance from each other; this *Work* is beſt done about the middle of *February*, if the Weather be open; the ſecond Year after *Planting* they may have their *Tops* cut off, leaving their *Stems* about a Foot above Ground, ſo will they put forth *Twiggs* which muſt be again cut down early the *Spring* following, which *Work* being continued every *Year*, the Owner will find conſiderable Advantage from ſuch *Plantations.* An Acre of Ground thus managed will turn to better *Account* than the like Parcel of *Land* ſown with *Wheat* or any Grain whatever, and it may be for this Reaſon that ſome would pretend to raiſe vaſt Sums of Money by planting ſeveral thouſand *Acres* in this way, as I have been informed ſeveral Gentlemen propoſe to do. It is certain at preſent *Oziers* turn to good *Account*, but I am of Opinion that if we had only as many more planted as we have now growing in *England*, the Markets would be over-ſtock'd with them, and their Price would fall. And beſides, every *Ground*, as I have ſaid before, will not produce them. In this Treatiſe may be found the ſeveral ſorts of *Trees* for Uſe, the different *Lands* they require for their Welfare, and the vaſt Returns they would bring in, if large *Plantations* were made of the ſeveral kinds, by a diſcreet Planter, who knew how to allot to every *Soil* the *Tree* proper for it. But I ſhall proceed now to give ſome Directions for the propagating of the large *Withy* or

Tree kind, which will alſo in a few Years time, afford profitable, though not very durable *Wood.* Its Uſe is for Perches, Rake-tales, and ſuch like. *Branches* of three or four Years *Growth*, about twelve Foot in length, being ſet near two Foot deep in the Ground in *February*, about fifteen Foot aſunder, will ſoon make handſome *Trees*, which will bear *Lopping* every fifth Year; theſe love wet *Ground*, and will not be made to proſper in any other. I might add, that this, and ſeveral other ſorts of *Willow* might be rais'd from *Seeds* which grow on the *Female Juli*, if we *ſow* them in wet boggy Ground, as is practiſed in *France* and other Countries.

The *Alder*, more than all other *Trees* beſide, delights in *Boggy Places*, and may be cultivated in the coldeſt wet Grounds. This *Amphibious Plant* is beſt raiſed from *Truncheons* or *Branches* about three Foot in length, ſetting them about *February* a Foot deep in the Ground; they thrive exceedingly on the Banks of Rivers, and will make ſuch *Shoots* in three or four Years time, as may be then cut and ſold to good Advantage for *Poles* and other Uſes; it is a laſting *Wood* if it lie continually under Water, and if we believe *Joſ. Bauhimus*, will, in courſe of time, turn to *Stone*, but if it be expoſed ſo as to be ſometimes wet and ſometimes dry, it is of no Duration. This *Plant* is alſo raiſed from *Seeds* in *Flanders*, where they make great Profit of it.

Thus have I given a ſhort View of the ſeveral ſorts of *Trees* which I would recommend to be planted for *Timber* and *Underwood*; I have endeavour'd to aſcertain the ſeveral *Soils* and *Situations* proper to each of them, which I hope may be of ſome uſe, for that in the Quantity of an Acre of Ground we frequently find *Earths* of very different *Qualities*, to any of which, one or other of the *Trees* I have named may be allotted. And now as I ſuppoſe, that every Gentleman who is about to make a *Plantation*, will certainly make it upon his own *Land*, or at leaſt on ſuch a Parcel of Ground as will by right be continued after his Demiſe in his Family, it is reaſonable enough to believe, that ſuch Perſons may have upon their Eſtates ſome *Timber* already growing, ſome *Trees* proſpering, others decaying: Now I ſay it would ſurely be good Husbandry to fell ſuch *Trees* as began to decline, either from too great Age, or too near Neighbourhood with others.

To the firſt, I can pretend to give no other Direction than to have them cut down at the proper *Seaſon*; but to the ſecond, (*i. e.*) where they grow too cloſe together, leave the moſt thriving *Trees* to grow and improve themſelves, and cut up the others *Root* and *Branch*, leaving convenient diſtances between the *Trees* which remain ſtanding, which ought to be only ſuch as have their *Tops* or leading *Shoots* proſperous and in good order. Our Countryman *Lawſon*, who had for above 40 Years ſtudy'd the Improvement and Management of *Woods* and *Timber-Trees*, has given us a very good Leſſon concerning the *dreſſing* and *cleaning* of *Woods*, which being ſhort, and much to the purpoſe, I ſhall inſert in his own Words.

" How many *Forreſts* and *Woods*, " wherein you ſhall have for one *thriving* " *Tree*, four (nay ſometimes twenty four) " *evil thriving*, rotten and dying Trees, " even while they live; and inſtead of " *Trees*, thouſands of *Buſhes* and *Shrubs!* " What *Rottenneſs*, what *Hollowneſs*, what " *dead Arms*, *wither'd Tops*, *curtail'd Trunks*, " what loads of *Moſs*, *drooping Boughs*, " and *dying Branches* ſhall you ſee every " where, and thoſe that are in this ſort, " are in a manner all unprofitable *Boughs*, " canker'd *Arms*, crooked little and ſhort " *Boals!* What an infinite Number of " *Buſhes*, *Shrubs*, and Skrags of *Haſels*, " *Thorns*, and other unprofitable *Wood*, " which might be brought by dreſſing to " become great and goodly Trees! Con" ſider now the Cauſe.

“ The *leſſer Wood* hath been ſpoiled with “ careleſs, unskilful, and untimely *Stowing*; and much alſo of the *great Wood.* “ The *greater Trees* at their firſt riſing “ have fill'd and overladen themſelves “ with a Number of *maſtful Boughs* and “ *Suckers*, which have not only drawn the “ *Sap* from the *Boal*, but alſo have made “ it knotty, and themſelves and the *Boal* “ moſſy for want of *Dreſſing*; whereas, “ if in the prime of *Growth* they had been “ taken away cloſe all but one *Top*, and “ clean by the *Bulk*, the Strength of all “ the *Sap* ſhould have gone to the *Bulk*, “ and ſo he would have recover'd and co- “ ver'd his *Knots*, and have put forth a “ fair, long, and ſtrait *Body* for *Timber*, “ profitable, huge, great of *Bulk*, and of “ infinite Laſt.

“ If all *Timber Trees* were ſuch (will “ ſome ſay) how ſhould we have crooked “ Wood for *Wheels*, *Coorbs*, &c?

“ *Anſwer*, Dreſs all you can, and there “ will be enough *crooked* for thoſe Uſes.

“ More than this, in moſt Places they “ grow ſo thick, that neither themſelves “ nor *Earth*, nor any thing under or near “ them can thrive, nor *Sun* nor *Rain* nor “ *Air* can come at them.

“ I ſee a Number of *Hags*, where out “ of one *Root* you ſhall ſee three or four “ (nay more, ſuch is Men's unskilful

“ greedineſs, who deſiring many, have
“ none good) pretty *Oaks* or *Aſhes* ſtrait
“ and tall; becauſe the *Root* at the firſt
“ *Shoot* gives *Sap* amain: But if *One* only
“ of them might be ſuffer'd to grow, and
“ that well and cleanly pruned all to his
“ very *Top*, what a *Tree* ſhould we have
“ in time, and we ſee by thoſe *Roots* con-
“ tinually and plentifully ſpringing, not-
“ withſtanding ſo deadly wounded, what
“ a Commodity ſhould ariſe to the *Owner*
“ and the *Commonwealth*, if Wood were
“ cheriſh'd and orderly dreſs'd. The waſte
“ *Boughs* cloſely and ſkilfully taken away,
“ would give us ſtore of *Fences* and *Fuel*,
“ and the *Bulk* of the *Tree* in time would
“ grow of huge length and bigneſs.

And now from what has been ſaid relating to the Cleanſing, Dreſſing and Pruning of *Woods*, two Things naturally offer to the Benefit of the Proprietors: *Firſt*, That the Profit which will accrue from the Fall of diſtemper'd and decaying *Timber* and *Underwood*, will afford a Sum of Money ſufficient to make large *Plantations*: And, *Secondly*, the *Trees* which remain ſtanding after this Weeding is perform'd, will grow and proſper exceedingly, by being then at liberty to receive a greater quantity of *Nouriſhment* from the *Earth*, and by enjoying ſuch a Proportion of *Air* as their Age and Strength will require.

CHAP. V.

The Method of Planting an Acre of Ground *with* TIMBER-TREES *and* UNDERWOOD; *with the* Profits *which will ariſe from that* Plantation *in Nine Years, Seventeen Years, and Twenty five Years after* Planting.

IF we conſider the many Advantages this Nation in general has receiv'd from the *Timber* of its own *Growth*, how by its powerful Fleets (the Off ſpring of its *Oaks*) *England* has gain'd the Dominion of the Seas, and now enjoys the Benefits of an Univerſal Commerce; without mentioning the Advantages it affords to every particular Owner of it: It is wonderful to me, that the propagating of *Timber*, a Commodity ſo valuable and ornamental, ſhould be ſo little encouraged now-a-days among us, when our natural *Store* is ſo near being conſumed, that to all appearance in a few Years time, we may be forced to ſeek it in foreign Countries.

Now, if I may be allow'd to judge in this Caſe, I conceive that the preſent Decay of our *Timber* may depend upon one or other of the following Reaſons.

Firſt, That the making *New Plantations* will be an *immediate Expence* to us: Or,

Secondly, that we cannot hope to reap any *Profit* to our ſelves from ſuch *Plantations* as might be made in our *times*; or elſe,

Thirdly, That many Gentlemen who are already Maſters of *Woods*, receive little *Profit* from them for want of due Care and Management.

The firſt and laſt of theſe Objections are anſwer'd, I think, in the 'foregoing Chapter, where the Advantages of Cleaning and Dreſſing of *Woods* are ſet down; in that not only *Money* is provided thereby to anſwer the Expence of *New Plantations*, but alſo the ſtanding *Trees* will be put into a thriving Condition.

It remains now for me to anſwer the other Objection, *viz.* That we cannot propoſe to reap any *Profit* to our ſelves from the *Plantations* which might be made by us. But I hope the Method which I ſhall herein propoſe, will give full Satisfaction to that Point.

For which end I would recommend that every *Plantation* which ſhall be made either in this preſent Age or hereafter, may conſiſt partly of *Forreſt* or *Timber-Trees*, and partly of *Coppice* or *Underwood.*

Now the *Underwood* which I propoſe to be planted and intermix'd among the *Timber-Trees* or *Standards*, may be cut in eight or nine Years after Planting, and ſo from time to time every eighth Year will produce a very conſiderable Return, as will appear hereafter in a ſtated Account.

Secondly, The *Plants* for *Underwood*, which will encompaſs on every Side the young *Timber-Trees*, will not only ſhelter them from Blaſts of Wind, which might be hurtful to them, but will alſo (by keeping off the circum-ambient Air) draw them into ſtrait and tall *Trees*, 'till they can ſhift for themſelves, and are ſtrong enough to bear the Severity of the Weather.

But to proceed, let us make choice of ſuch Ground to plant upon, as may not be thought proper for Corn, or at leaſt ſuch as will yield only a poor Crop of Grain. I ſuppoſe ſuch Land will be worth about five Shillings *per* Acre by the Year, and by all Means let it be, if poſſible, near ſome Navigable River, for the greater Eaſe and Cheapneſs of Carriage. Now as I have before hinted, that as the Land is, ſo muſt we allot the proper *Plant* for it, I only wiſh it may be deep enough to nouriſh the *Oak* and *Ilex*, which are *Tap-rooted Plants*, and therefore delight in deep Soil.

Suppoſing then we are fortunate enough to meet with an Acre of Ground proper for *Oaks*, we muſt firſt encompaſs it with a good Fence, and then either dig or plough the Land at a proper Seaſon, to lie Fallow for ſome time, 'till the *Turf* be mellow'd and fit for our Purpoſe.

An *Acre* of Ground contains 160 Square *Perch* or *Rods*, each Rod being 16 Foot and a half. This quantity of Land muſt be fenced about with a Ditch ſix Foot wide, three Rows of *Quickſetts* planted upon the Sides of its Banks at a Foot diſtance from each other, and a dry Hedge on the Top.

A Labouring Man working for *one Shilling per diem*, may prepare nine Foot of the Ditch in length in one Day, and cut Stakes and Buſhes, and make about five *Rod* of the dry Hedge in a Day, ſo that he may prepare the Hedge, make the Ditch, plant three Rows of *Quickſetts*, and pay the Expence of them after the Rate of *two Shillings per* Hundred, for about *three Shillings* the *Perch*, ſo will the whole Charge of making a Fence about an *Acre* of Land be *Seven Pounds Sixteen Shillings*, but we may fence in two *Acres* of Land after the ſame Rate, being 32 Perch long, and ten Perch wide, for *nine Pounds ſix Shillings*, for the ſame Reaſon that if *one Hundred Hurdles* will hold a *thouſand* Sheep, *two Hurdles* added to them will fold *two thouſand* Sheep, that is, if the Sheep Pen has 49 *Hurdles* on each Side, and *one* at each End, it juſt contains half the Quantity of Ground that it would do, if it had the Breadth of *two Hurdles* at the Ends. *N. B.* A *Pole* or *Perch* planted with three Rows of *Quickſetts* will take up about 48 *Plants*, ſo will there be required to plant about an *Acre* 2496 *Plants*.

Thus having provided a good Fence to defend our young *Plantation* from Dangers of Cattle and other Inconveniencies, the next thing to be done, is to prepare the encloſed Land for *Planting*, which may be perform'd ſeveral Ways.

Suppoſing the Land to be encumber'd in the worſt Manner with *Buſhes*, *Whinns*, or *Furze*, &c. ſo that a Plow cannot be uſed upon it, then may it be dug and clean'd for about *ſix Pence* the ſquare *Perch*; the whole *Acre*, if it be dug at that rate, will come to *four Pounds*. But if the Ground ſhould happen to be in that State that a Plough can work in it, an *Acre* may be plow'd for about *twelve Shillings*.

The Land being thus prepared, one *Acre* will contain forty Plants of *Oak* at 33 Foot diſtance, and as I have hinted before, that all *tap-rooted* Trees are endanger'd by removing, and that when they are *tranſplanted* they ſeldom come to the Perfection of thoſe which are raiſed from *Seed*, and remain always in the ſame place; I ſhall therefore recommend that forty *Beds* of good Natural *Soil* be prepared on the *Acre* of Land at the aforeſaid diſtance of 33 Foot from each other, and that in each *Bed* five or ſix *Acorns* be planted about four Inches deep in *February*, which Seaſon I chuſe rather than *Autumn*, becauſe the over-wet of ſome Winters might rot the Seeds, or *Mice*, *Squirrels*, and ſuch like Animals, might deſtroy them.

Theſe forty *Beds* may be well prepared by one Man in three Days, at *one Shilling per Diem*, two hundred *Acorns* may be worth about *ſix Pence*, and the planting of them be worth about *ſix Pence* more, which makes in all *four Shillings*.

The *Acre* of Land being thus ſown with *Oaks*, we may interſow the remaining part of the Ground with *Aſh-Keys* which have been kept the Winter in dry Sand, theſe will turn to very good account for *Underwood*, and the Land is already dug or plow'd for our purpoſe.

One Buſhel of *Aſh Keys* may be worth *Two Shillings*, the Sowing them *One Shilling*, and the Harrowing the Ground after Sowing will be worth *Five Shillings* more, in all *Eight Shillings*. When the *Oaks* and *Aſhes* are come up, they muſt be hough'd and cleans'd from Weeds. One Man may do this Work in three Days, leaving the Diſtance of three Foot between the *Aſhen Plants*; the Expence of this weeding will be *Three Shillings*; for I rate a Man's Work at *One Shilling per Diem*, becauſe I ſuppoſe ſuch *Plantations* will only be made in thoſe Places where Land is cheap, and conſequently every thing elſe is valuable in Proportion.

The ſecond Year we may draw ſome of the young *Oaks*, leaving a ſingle *Plant* in each *Bed*; now it is likely that all the *Acorns* which were put into the Ground, may not come up, therefore I would adviſe, as the ſureſt way to have our Expectations anſwered from the *Seeds* we ſow, to try the Goodneſs of them before they are ſown, which may be done by putting them in Water, and planting only thoſe which ſink quickly to the Bottom.

An *Acre* of Land thus *fenced*, *dug*, *cleanſed* and *planted*, comes to *Twelve Pounds* and *Eleven Shillings*, and two *Acres* dreſſed and planted in like manner will coſt *Eighteen Pounds Sixteen Shillings*.

But if the Land be clean enough to admit the Plough, then the Charge of *fencing*, *planting*, &c. of one *Acre*, will be *Nine Pounds three Shillings*, and the Expence of *two Acres* dreſs'd in the ſame Manner, *Twelve Pounds.*

In nine Years after this *Plantation* has been made, the *Aſh Plants* will be fit to cut for *Poles* or *Hoops*, worth upon the Place *Ten Shillings per Hundred:* If the *Plants* ſtand at a Yard diſtance from each other, the *Acre* of Land will then contain about 4800 *Plants*, which may be ſold for *Twenty four Pounds.* The *Quickſet* Fence muſt likewiſe be cut down, and will yield about ten Load of Buſhes, we will ſuppoſe them only worth *Five Shillings per* Load; altho' near *London* they ſell for four times as much.

The whole Charge of *fencing*, *digging*, and *planting* an *Acre* of Land with *Oaks* for *Timber*, and *Aſh* for *Underwood*, with the Profit of the firſt nine Years *Growth*, may be ſeen in the following Account.

Account of the Nine Years after Planting, or Firſt Cutting.

	l.	s.	d.
Expence of fencing, digging and ſowing an *Acre* of Land for *Timber* and *Underwood*	12	11	0
Intereſt of the aforſaid Sum for 9 Years, at 5 *per Cent.*	05	12	6
Rent of the Land for 9 Years, at 5 *s. per Acre per Annum,*	02	05	0
For cutting 4800 *Aſhen Poles*, one Man 5 Days at 5 *s. per Diem,*	00	05	0
Nine Years Expence,	20	13	6

	l.	s.	d.
Received for 4800 *Aſhen Poles*, at 10 *s. per Hundred,*	24	00	0
Received more for 10 Load of Buſhes, at 5 *s. per* Load,	02	10	0
Nine Years Gain,	26	10	0
Nine Years Expence,	20	13	6
Neat Profit of the *Plantation* in 9 Years	05	16	6

After this Cutting we may cut again in eight Years time, and expect 4 or 5 Poles on each *Aſhen Plant.*

Account of the Seventeen Years after Planting, or Second Cutting.

	l.	*s.*	*d.*
Rent of the Land for 8 Years, at 5 *s. per Annum*,	02	00	0
Expence of Cutting 19200 *Aſhen Poles*, (reckoning four to each Plant) one Man 20 Days, at 1 *s. per Diem*,	01	00	0
Seventeen Years Expence,	03	00	0

	l.	*s.*	*d.*
Received for 19200 *Aſhen Poles*, at 10 *s. per Hundred*,	096	00	0
Received more for 10 Load of Buſhes, at 5 *s. per* Load,	002	10	0
Gain'd clear of Expences by the firſt Cutting,	005	16	6
The Intereſt which might be gain'd on 5 *l.* 16 *s.* 6 *d.* in eight Years at 5 *per Cent.* is about	002	06	0
Seventeen Years Gain,	106	12	6
Seventeen Years Expence,	003	00	0
Neat Profit of the *Plantation* in 17 Years after Planting,	103	12	6

Account of Twenty five Years after Planting, or Third Cutting.

	l.	s.	d.
Rent for 8 Years, at 5 *s.* the *Acre per Annum*,	02	00	0
Expence of Cutting 19200 *Aſhen Poles*, one Man 20 Days at 1 *s. per Diem*,	01	00	0
Twenty five Years Expence	03	00	0

	l.	s.	d.
Receiv'd for 19200 *Aſhen Poles*, at 10 *s. per Hundred*,	096	00	0
Receiv'd for ten Load of Buſhes, at 5 *s. per* Load,	002	10	0
Gain'd clear of Expences by the ſecond Cutting,	103	12	6
The Intereſt which might be gain'd on the aforeſaid Sum in 8 Years at 5 *per Cent.*	041	08	0
Twenty five Years Gain,	243	10	6
Twenty five Years Expence,	003	00	0
Neat Profit of the *Plantation* in 25 Years,	240	10	6
To which we may add the Value of the forty *Oaks* then growing in the ſaid *Plantation*, worth 10 *s. per Tree*,	20	00	0
In all	260	10	6

By the 'foregoing Account we find that an *Acre* of Land, planted as I direct, may produce the Sum of 260 *l.* 10 *s.* 6 *d.* in the ſpace of *Twenty five Years*, clear of all Expences of Planting, and Value of the Land, and the *Oaks* if they are ſtill continued growing, will yet produce a more conſiderable return to the *Owner*, or his *Family* after him.

By the *Example* of this *Plantation*, others may be made with different Kinds of *Trees*; and if the Planter has due regard to the *Soils* proper to what he deſigns to plant, he may expect a Return for his Labour and Induſtry anſwerable to what I have mention'd in this Account, and if his Ground happens to be already *fenced* for his Purpoſe, and is capable of admitting a Plough upon it, he may yet reap a much more conſiderable Profit from his *Plantation.*

I ſhall now conclude this Treatiſe with acquainting my Reader with what he is to expect in the Second Part; I purpoſe in that to treat of every thing (ſo far as my Experience will permit) which may tend to the Improvement of the *Parterre* or *Flower-Garden*; wherein I ſhall firſt give the Explanation of a new Invention, for the more ready deſigning and laying out of *Garden-Plats*, by which *Inſtrument* it will be poſſible to produce more Variety of *Figures* for *Gardens* in an Hour's time, than we can find in all the printed Books now extant: I ſhall then give my Reader the beſt Methods of raiſing and propagating all ſorts of Flowers: And laſtly, endeavour to preſcribe ſuch Rules for the adorning of *Gardens*, as may make them delightful in every Month of the Year. And now that this Work may be the more compleat, I deſire all curious Gentlemen will communicate to me what new Experiments they have made in *Planting* and *Gardening*, directed to the Publiſher of this Firſt Part; which Favours I ſhall gratefully acknowledge, and inſert in the ſucceeding Sheets.

FINIS.

NEW IMPROVEMENTS OF *Planting* and *Gardening*, BOTH Philoſophical *and* Practical:

Explaining the

MOTION of the SAPP AND GENERATION of PLANTS.

With other Diſcoveries never before made Publick, for the Improvement of Foreſt-Trees, Flower-Gardens, or Parterres; with a New Invention whereby more Deſigns of Garden-Platts may be made in an Hour, than can be found in all the Books now extant. Likewiſe ſeveral rare Secrets for the Improvement of Fruit-Trees, Kitchen-Gardens, and Green-houſe Plants.

Adorn'd with COPPER PLATES.

> ———*Hortos quæ* Cura Colendi.
> *Ornaret*———
> Virg. Georg.

PART II.

The Third Edition Corrected.

By *RICHARD BRADLEY*, Fellow of the ROYAL SOCIETY.

LONDON: Printed for *W. MEARS* at the *Lamb* without *Temple-Barr*. MDCCXX.

To the Right Honourable

Thomas **Lord** *Parker*,

Baron of MACKLESFIELD in the County Palatine of *Cheſter*, Lord Chief Juſtice of ENGLAND, and one of His Majeſty's moſt Honourable Privy-Council.

My Lord,

YOUR Lordſhip having been pleas'd to think favourable of my Firſt Book upon this Subject, I have preſum'd to Inſcribe this Part to YOU, not without Belief that the World will be inclined to hope better from me, when they find my Studies influenced by ſo Great a Patronage.

IT is not only from Your Lordſhip's Inclination to the Subject of theſe Papers, of which none can be a better Judge than Your Self, that you are not offended with any thing of this kind, but that you know a due Cultivation of theſe Innocent Pleaſures, will both improve our Underſtanding, and better our Morals.

The Temptations to Vice are always taken off in Proportion to the Employments of thoſe Minutes which are by many ſpent in Idleneſs; and the vitious and litigious Part of Mankind, whom Your Lordſhip's juſt Awards correct, would be much leſſened, if Recreations of this Nature took up more of the Time of thoſe who have an Opportunity of ſpending it in Gardens.

I avoid, my Lord, ſpeaking in the common Way of Dedicators, being certain that nothing can more offend YOU, than a Recital of Your own Praiſes. If any thing in theſe Papers can be but the Entertainment of one half Hour of Your Lordſhip's in Your Retirement from the Sphere of Publick Buſineſs, it is the utmoſt Ambition of,

May it pleaſe your **Lordſhip,**

Your **Lordſhip's**

moſt Devoted, Humble Servant,

R. BRADLEY.

PREFACE.

THE firſt Part of my Book having met with a favourable Reception from the Publick, and many Perſons of Quality and Honour having been pleas'd to ſend me their Obſervations on this Subject, my firſt Acknowledgment is due to them; and as their Remarks are very Curious, I promiſe to inſert them in proper Places of this Work. Information is always welcome to me, and Cavils I ſhall not mind, tho I have not a few from the Quarter from whence I preſaged, but have had the Good Luck to have the moſt Objections, from the moſt Ignorant.

My Deſign in this Second Part I will propoſe to my Reader in the ſame manner as I did in the former, and give him a general View of what he is to expect in the enſuing Sheets.

IN the firſt Place, my Reader will find the Deſcription, and Uſe of my Invention for the more ſpeedy Drawing or Deſigning of Garden-Platts; and I am of Opinion, that when he once underſtands the right Uſe of it, I ſhall have his Thanks for that Diſcovery.

I have then given the beſt Method of Propagating and Introducing all the Ornaments of a Garden, as *Evergreens*, *Flowering Shrubs*, *Perennial*, and *Annual Flowers*, and *Bulbous-rooted Plants*, with their different Heights, Beauties, and Times of Flowering. By theſe Means a Garden may have always ſomething entertaining in it, while a ſucceſſive Scene of Delight is kept up by a due Regard to the peculiar Seaſons of each Flower.

THERE is one Particular which relates to this Subject that could be no where ſo well introduced as here, *i. e.*

the general Irregularity and Inconſiſtency of dead Ornaments in Gardens. I ſhall only hint at a few. *Iron-Works* are often placed where there are no Proſpects. We ſee many large *Statues* in ſmall Gardens, and a few ſmall ones in large Gardens. The miſplacing of Ornaments in Gardens is another Fault, which is ſometimes ſo abſurd as to equal the miſmanag'd Picture in *Horace*.

> *Delphinum* Silvis *appingit*, *Fluctibus*
> Aprum.

THUS we view a *Neptune* in a *dry Walk*, and a *Vulcan* in the Middle of a *Fountain*.

THESE are ſo ſhocking to common Senſe, that I think it ſufficient only to take a curſory Notice of them, to make them avoided.

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Fig I

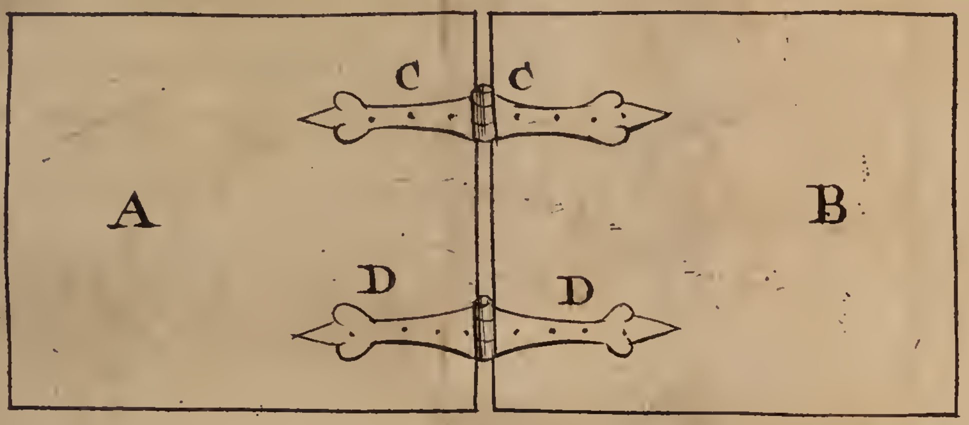


Fig II

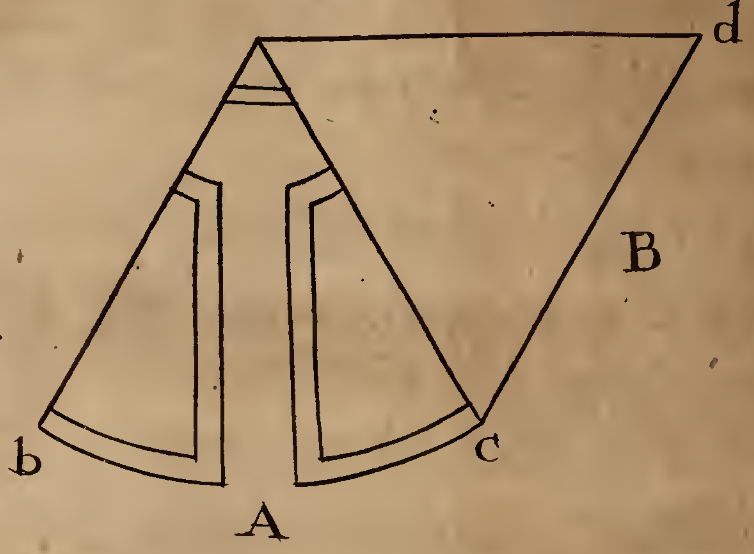


Fig IIII

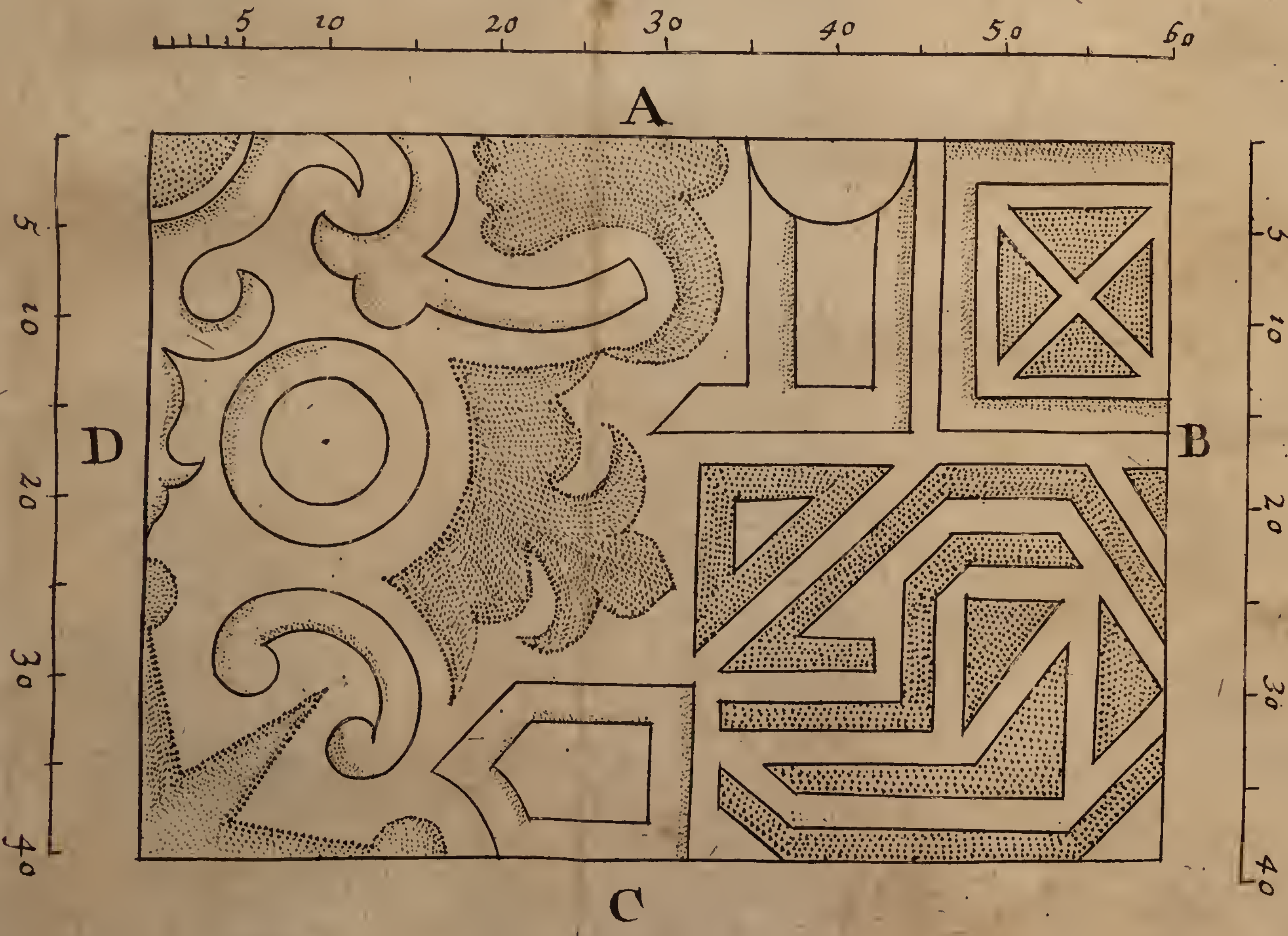
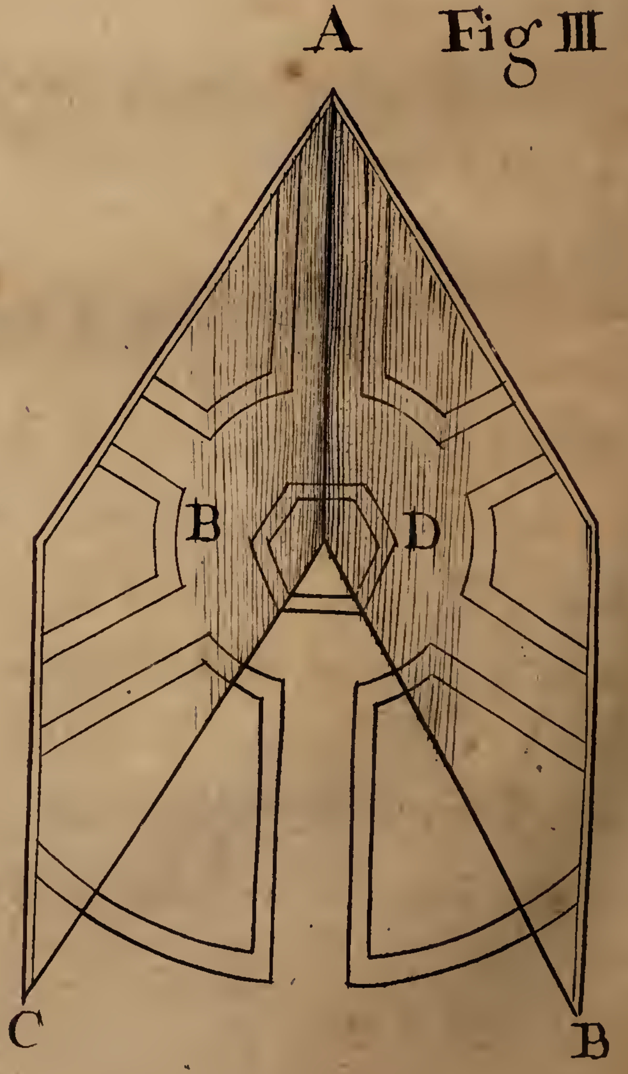


Fig III



NEW IMPROVEMENTS OF *Planting* and *Gardening*, BOTH Philoſophical and Practical.

CHAP. I.

Deſcription and Uſe of a NEW INVENTION *for the more ſpeedy Deſigning of* GARDEN-PLATS; *whereby we may produce more Variety of Figures in an Hour's Time, than are to be found in all the Books of* Gardening *now extant.*

SINCE the Inſtrument I now deſign to treat of has afforded ſome Pleaſure to many of my Acquaintance, I have been eaſily perſwaded to make it publick. It is of that *Nature*, that the beſt Deſigners of

Draughts-Men may improve and help their Fancies by it, and may with more Certainty hit the Humour of thoſe Gentlemen they are to work for, without being at the Trouble of making many Varieties of *Figures* or *Garden-Platts*, which will loſe time, and cauſe an unneceſſary Expence, which frequently diſcourages Gentlemen from making up their Gardens. In ſhort, the Charge of the *Inſtrument* is ſo ſmall, and its Uſe ſo delightful and profitable, that I doubt not its favourable Reception in the World.

BUT to proceed: We muſt chuſe two Pieces of *Looking-glaſs* of equal Bigneſs, of the Figure of a long Square, five Inches in Length, and four in Breadth; they muſt be cover'd on the Back with Paper or Silk, to prevent rubbing off the Silver, which would elſe be too apt to crack off by frequent Uſe. This Covering for the Back of the *Glaſſes* muſt be ſo put on, that nothing of it may appear about the Edges on the bright Side.

THE *Glaſſes* being thus prepared, they muſt be laid Face to Face, and hinged together, ſo that they may be made to open and ſhut at Pleaſure, like the Leaves of a Book; as for *Example*, the firſt *Figure* ſhows us the Back of the two *Glaſſes*, *A* and *B*, join'd together by Hinges *CC* and *DD*, ſo that they may be open'd or ſhut to any part of a Circle; and now the *Glaſſes* being thus fitted for our purpoſe, I ſhall proceed to explain the Uſe of them.

DRAW a large Circle upon Paper, divide it into three, four, five, ſix, ſeven or eight equal Parts, which being done, we may draw in every one of the Diviſions, a Figure at our Pleaſure, either for *Garden-Platts* or *Fortifications*; as for *Example*, in the ſecond *Figure* we ſee a Circle divided into ſix Parts, and upon the Diviſion mark'd *A* is drawn part of a Deſign for a *Garden*. Now to ſee that Deſign entire, which is yet confuſed, we muſt place our *Glaſſes* upon the Paper, and open them to the ſixth part of the Circle, (*i.e.*) one of them muſt ſtand upon the Line *b* to the Center, and the other muſt be open'd exactly to the Point *c*, ſo ſhall we diſcover an entire *Garden-Platt* in a Circular Form, (if we look into the *Glaſſes*) divided into ſix Parts, with as many Walks leading to the Center, where we ſhall find a Baſon of an *Hexagonal Figure*.

WE may more plainly ſee how the *Glaſſes* ought to be placed upon the Deſign, by viewing the third *Figure*. The Line *A* where the *Glaſſes* join, ſtands immediately over the Center of the Circle, the Glaſs *B* ſtands upon the Line drawn from the Center to the Point *C*, and the Glaſs *D* ſtands upon the Line leading from the Center to the Point *E*; the *Glaſſes* being thus placed, cannot fail to produce the compleat *Figure* we look for; and ſo whatever equal part of a Circle you mark out, let the Line *A* ſtand always upon the Center, and open your *Glaſſes* to the Diviſion you have made with your Compaſſes. If, inſtead of a Circle, you would have the Figure of a *Hexagon*, draw a ſtraight Line with a Pen from the Point *c* to the Point *d* in the ſecond *Figure*, and by placing the *Glaſſes* as before, you will have the *Figure* deſired.

SO likewiſe a *Pentagon* may be perfectly repreſented, by finding the fifth Part of a Circle, and placing the *Glaſſes* upon the *Out-lines* of it; and the fourth Part of a Circle will likewiſe produce a Square by means of the *Glaſſes*, or by the ſame Rule, will give us any *Figure* of equal Sides. I eaſily ſuppoſe that a curious Perſon by a little Practice with theſe *Glaſſes* may make many Improvements with them, which perhaps I may not have yet diſcover'd, or have, for Brevity ſake, omitted to deſcribe.

IT next follows that I explain how, by theſe *Glaſſes*, we may from the Figure of a *Circle* drawn upon Paper, make an *Oval*; and alſo by the ſame Rule repreſent a long *Square* from a perfect *Square*. To do this, open the *Glaſſes* and fix them to an exact *Square*, place them over a Circle and move them to and fro 'till you ſee the Repreſentation of the Oval Figure you like beſt; and ſo having the Glaſſes fix'd, in like manner move them over a ſquare Piece of Work 'till you find the Figure you deſire of a long *Square*. In theſe Tryals you will meet with many Varieties of Deſigns. As for Inſtance, the fourth *Figure*, altho' it ſeems to contain but a confuſed Repreſentation, may be varied into above 200 different Repreſentations by moving the *Glaſſes* over it, which are open'd and fix'd to an exact *Square*. In a Word, from the moſt trifling Deſigns, we may by this Means produce ſome Thouſands of good Draughts.

BUT that the fourth *Figure* may yet be more intelligible and uſeful, I have drawn on every Side of it a Scale divided into equal Parts, by which Means we may aſcertain the juſt Proportion of any Deſign we ſhall meet with in it.

I have alſo mark'd every ſide of the fourth *Figure* with a Letter, as *A*, *B*, *C*, *D*, the better to inform my Reader of the Uſe of the Invention, and put him in the way to find out every Deſign contain'd in that *Figure*.

Example I. TURN the Side *A* to any certain Point, either to the *North*, or to the Window of your Room, and when you have open'd your *Glaſſes* to an exact *Square*, ſet one of them on the Line of the ſide *D*, and the other on the Line of the ſide *C*, you will then have a ſquare *Figure* four times as big as the engrav'd Deſign in the Plate; but if that Repreſentation ſhould not be agreeable, move the *Glaſſes* (ſtill open'd to a *Square*) to the Number 5, of the ſide *D*, ſo will one of them be parellel to *D*, and the other ſtand upon the Line of the ſide *C*, your firſt Deſign will then be vary'd; and ſo by moving your *Glaſſes* in like manner from Point to Point, the Draughts will differ every Variation of the *Glaſſes*, 'till you have diſcover'd at leaſt fifty Plans differing from one another.

Example II. TURN the ſide mark'd *B*, of the fourth *Figure*, to the ſame Point where *A* was before, and by moving your *Glaſſes* as you did in the former Example, you will diſcover as great a Variety of Deſigns as had been obſerv'd in the foregoing Experiment; then turn the ſide *C* to the place of *B*, and managing the *Glaſſes* in the manner I have directed in the firſt Example, you may have a great Variety of different Plans, which were not in the former Tryals; and the fourth ſide *D* muſt be managed in the ſame Manner with the others; ſo that from one Plan alone, not exceeding the Bigneſs of a Man's Hand, we may vary the *Figure* at leaſt two hundred times, and ſo conſequently from five *Figures* of the like Nature, we might ſhew about a thouſand ſeveral ſorts of *Garden Platts*, and if it ſhould happen that the Reader has any Number of Plans for *Parterres* or *Wilderneſs* Works by him, he may by this Method alter them at his Pleaſure, and produce ſuch innumerable Varieties, that it is not poſſible the moſt able Deſigner could ever have contrived.

AND ſeeing I have given ſuch Directions in this Chapter, as I hope may inform the Curious of the Uſe of this new-invented Inſtrument, I think it may not be improper to advertiſe that the Publiſher of theſe Papers is provided with *Glaſſes* of ſeveral Sizes ready fitted up for the Experiment at the following Prices; the ſmall ſort at three Shillings, and the other at five Shillings.

CHAP. II.

Of EVER-GREENS, *their Culture and Uſe in* GARDENS.

I Am in this Chapter to ſpeak of the Culture of *Ever-Greens*, and their Uſe in Gardens. They are ſo ornamental where they are rightly managed, that I think no Garden can be compleat without 'em; they make beautiful and uſeful Hedges, and in ſingle *Plants*, when they have been order'd by a curious and ſkilful Hand, they are ſo many growing Monuments of the Art of Gardening. But to come to Particulars, the *Ever-Greens*, which are commonly propagated by the Gardeners, are *Hollys*, *Yews*, the *Laurus-tinus*, *Bay*, *Box*, *Laurel*, *Philarea*, *Alaternus*, *Juniper*, *Piracantha*, *Ilex*, *Arbutus*, and the *Ever-Green Privet*. Theſe have every one their proper Places in Gardens, with reſpect to their ſeveral Stages of *Growth*. Some of them may be kept in Shape and Compaſs with very little Trouble, while others are too apt to out-grow the Care of the Gardener, let him be never ſo vigilant.

SECT. I.

Of the HOLLY.

TO conſider theſe ſingly, I ſhall begin with the *Holly*, which is, in my Opinion, the moſt beautiful of all the reſt. It will grow to a very large Tree. I have ſeen *Plants* of this Kind above ſixty Foot high in the *Holly* Walk near *Frenſham* in *Surry*, in which Place they delight extreamly; the *Soil* is dry, rather inclining to *Sand* than *Loam*: The *Holly* is a *Tap-rooted Plant*, and therefore does not love tranſplanting, unleſs the Roots have been often prun'd in the Nurſery, by digging about it, which a careful Gardener will frequently do, that they may riſe with a Ball of Earth when they are to be removed, but yet notwithſtanding all his Care, it is adviſeable to plant them in Baskets ſo ſoon as they are taken up, that the Earth which riſeth with the *Roots*, may not break or fall from them in the Carriage from one Place to another: The Baskets they are planted in, muſt be ſet with them in the Places where they are to remain, and will rot in a few Months, and not any ways hinder the Trees from drawing the Nouriſhment they require from the adjacent Earth, which ſhould be natural Soil (without the leaſt Mixture of *Dung*) and cannot well be too barren. The Removal of this Tree ought to be rather in *September* than towards the Spring, to ſave the Trouble of Watering, which oftentimes puts the Gardener to great Charge and Inconveniency. The *Berries* of this *Plant* when they are ripe ſhould be gather'd, and after being laid to ſweat for ſome time, may be put in *Sand* or *Earth*, *S. S. S.* 'till the *Autumn* following, when they may be ſown in the Nurſery Beds. Now as theſe will lie in the Ground for a long time before they begin to ſpring, I would adviſe the following Method to be made uſe of in order to forward their *Germination*, and thereby to gain a Year at leaſt in their

Growth. I have obſerv'd that *Seeds* or *Berries* of this Kind which have been eaten by Fowls and paſs thro' their Bodies, have began to vegetate ſoon afterwards; we have therefore no more to do than to contrive a Mixture which ſhall have in it a Heat and Moiſture reſembling that in the Bodies of Birds, and to lay the *Seeds* in it for a few Days before we ſow them, which will anſwer the End we deſire: For this Purpoſe therefore provide a Buſhel of *Bran*, in which, after having mix'd your *Seeds* or *Berries*, wet the whole very well with Rain or Pond-Water, and let your *Preparation* remain for ten Days without any Diſturbance in a Veſſel of Wood or Stone. About three Days after the Mixture has been prepared it will begin to heat, and ſo continue to ferment for thirty or forty Days, if it be carefully ſprinkled from time to time with warm Water as it begins to dry. The Heat of this wet *Bran* will prepare the *Berries* mix'd with it, and put them into a vegetable Poſture in about a Week's time after the Ferment has began, and then may be ſown in the Nurſery. For this new-invented artificial Heat I am oblig'd to the incomparable Sir *Iſaac Newton*, to whom every Art is greatly obliged.

THE young *Stocks,* which may be thus raiſ'd from the *Berries,* will be fit to graft on, or be inoculated at four or five Years *Growth,* if they are deſign'd to be train'd up for Ornament of our Garden. The *Grafting* muſt be done in *March,* and the *Inoculating* or *Budding* in *July* ; but otherwiſe if they ſhould be made uſe of for *Standard-Trees,* or *Hedges,* let them be planted at their proper Diſtances while they are very young, that they may the better accuſtom themſelves to the *Soil* they are to grow in. *Birdlime* is made of the *Bark* of this *Tree* gather'd about *Midſummer,* boil'd about twelve Hours in Spring-Water 'till the *Green Bark* ſeparates from the others; the *Green* muſt then be laid in a cool Place and cover'd with *Weeds* or *Fern* for a Fortnight, or 'till it become a *Mucilage,* then beat it in a Stone Morter, 'till it be a tough Paſte, and waſh it well in ſome running Water, and then putting it in an earthen Veſſel to ferment and purge it ſelf for four or five Days, waſh it for the ſecond time, and put it into a freſh Pipkin, adding to it one third part of *Gooſe-greaſe* well clarified, encorporate them on a gentle Fire, ſtirring your Compoſition 'till it be cold, and keep it in Urine for your Uſe.

MR. *Evelyn* commends the *Holly* above all other *Plants* for *Hedges* and ſtrong *Fences* ;

Fences; and indeed was it not for the Benefit of *Wall-Fruit*, I ſhould prefer a thick well grown *Holly* Hedge before any Wall that could be built, the beautiful *Green* of their armed *Leaves*, and the Vermilion Colour of their *Berries*, afford a moſt agreeable Proſpect in every Month of the Year, and diſdain the rudeſt Attacks of the Weather, Cattle, *&c.*

HAVING now ſet down what I think is moſt material relating to the common or plain-leav'd *Holly*, I am to give ſome Account of the variegated ſorts of *Hollies*, which are ſo much eſteem'd by the Curious, and contribute to the Ornament of our Gardens. Of theſe we have about twenty different Kinds which are diſtinguiſh'd from one another by the Names of thoſe who firſt diſcover'd them. It would be troubleſome to relate them here, and would be of very little Service to my Reader, ſince in the whole Catalogue of them it would be impoſſible to diſcover the Beauty or Imperfections of any one among them; let it ſuffice that every Gentleman pleaſe himſelf rather by examining them in the Nurſeries, of which there are ſo many about *London*. I ſhall only here take Notice that there are three ſorts of *Stripes* in *Vegetables*, thoſe whoſe Leaves are edged with Cream Colour, thoſe edged with Yellow, and the bloach'd Sorts as the Gardeners call them: And it is a certain Rule, that whatever Plant has its *Leaves* edged about with theſe diſtemper'd Colours, will always remain variegated, without putting forth ſo much as one plain *green Leaf*; and on the other hand, ſuch Plants as have their *Leaves* bloach'd, tinged or ſpotted in the middle, will ſeldom remain ſtrip'd, if they be planted in good Ground, but from time to time will ſhoot out Branches intirely Green, and at length loſe all their other Colours; from whence we may obſerve that the Sap, when it appears diſcoloured only towards the middle of the *Leaf*, is not then ſo much diſtemper'd, but that it may be reſtor'd by wholſom Nouriſhment, but that when the tinged Sap has reach'd the extream Parts of the *Leaves*, ſo much Venom is then mix'd with it, that it is impoſſible to overcome it by any means, and even the *Fruit*, which is certainly fed with the moſt refin'd *Juices* of the Plant, is alſo equally corrupted with the ſame Poiſon, as its Stripes plainly ſignify.

ANOTHER Obſervation relating to ſtrip'd Plants is, that when a Plant begins to bloach, a skilful Gardener may provoke the Poiſon which begins to tinge the *Leaves*, and by checking the Nouriſhment of the Plant, and giving it unwholſome

ſome Diet, may by degrees unvenom the whole, and produce what they call an *Edger*, *i. e.* a Plant whoſe *Leaves* are Edged with White or Yellow. Again, there is another Experiment relating to this Caſe which is very well worth our Notice, it was made and communicated to me by a curious Gardener, who had many Plants of the Common *Jeſſamine* with Edged *Leaves*, upon which he engrafted Cions of the *Spaniſh Jeſſamine*, whoſe *Leaves* had not been known to ſtripe, the Cions of the *Spaniſh Jeſſamine* upon their budding forth produced *Leaves* bloached with Yellow, and I doubt not but they may be made *Edgers* with a little more Skill; from hence it appears, that when the moſt ſubtil *Juices* of a Plant are poiſon'd, any Plant which ſhall be fed from it will be envenom'd by it. It would therefore be well to ſow the Seed of *Miſletoe* upon *Edged-Leav'd* Plants, to have it with variegated *Leaves*. What relation theſe Obſervations may have to Animals, may be further conſider'd by thoſe whoſe Studies more immediately relate to the Health and Preſervation of Animal Bodies. I ſhall proceed to conſider the ſtrip'd *Hollys*, with reſpect to their Figure and Uſe in Gardens; the Nature of this Plant is ſuch, that it cannot be Pruned into thoſe nice Figures, which others whoſe *Leaves* are ſmall, have been framed to, therefore I cannot propoſe any other Form than that of a Pyramid, or a Ball or headed Plant. The firſt ought to be kept taper, ending in a ſharp Point on the Top, and the headed Plants of them ſhould be ſo prun'd, that their Heads may reſemble the Cap of a *Muſhroom*, which Figure, in my Opinion, is to be preferr'd before that of a *Globe*. Theſe Plants, if they are well train'd up, and have their *Leaves* beautifully variegated, are very Ornamental, when they are mix'd skilfully with Plants of *Ever-greens*, ſuch as *Yews*, *Lauruſtinus*, or the like.

I have read ſome where of a pretty Invention of planting *Ever-green Hedges* with *Columns* and *Pilaſters* of variegated *Hollys* ſet in them at certain Diſtances, which muſt needs have a good Effect if they are well prun'd; and I think, if handſome Flower-Pots were placed on their Tops, ſo that a healthful Branch might go through each of them to be train'd into *Balls* or *Pyramids*, it would ſtill contribute to the greater Beauty of the Deſign.

SECT.

SECT. II.

Of the YEW-TREE.

THE *Yew-Tree* is very ſlow of Growth; and therefore produceth tough and hard Timber; in ſome Parts of *Surry* we find ſome *Groves* of this beautiful *Ever-green,* which conſiſt of very large *Trees,* and ſeem rather to be the Produce of Nature than Art; the *Roots* are apt to break into many *Fibres,* and therefore this Plant delights in light Soil, and ſuch as is commonly ſtiled Barren; the coldeſt Mountains produce this *Tree* more readily than the richeſt Soils, or more gentle Expoſures, ſo that rich Manures are to be avoided in the Culture of this Plant; the *Berries* of it after they are cleaned from their Pulp, and well dry'd, may either be laid in Sand as I have directed thoſe of the *Holly* before they are ſown, or mix'd with the Bran and Water before-mention'd, for their more ſpeedy Germination. The *Leaves* of the *Yew* are ſo ſmall, that it is poſſible to bring this kind of *Tree* into any Form we deſire, as the famous Plants now growing in the *Phyſick Garden* at *Oxford,* and that in the Church-Yard at *Hillingdon* near *Uxbridge,* may certify; I have ſeen great Varieties of Eigures very well repreſented in Plants of this ſort, as Men, Beaſts, Birds, Ships, and the like; but the moſt common Shapes which have been given it by the Gardeners, are either Conick or Pyramidal. It is of great uſe for Hedges, and make moſt agreeable Diviſions in Gardens; it is cuſtomary to fence in the Quarters of Wilderneſs Works with theſe Plants, where they have a very good Effect; in a Word, there is no Difficulty in propagating this Plant, and little Hazard in the Removal of it; eſpecially if the Roots of it are prun'd from Time to Time by digging about it, while it ſtands in the Nurſery. Its Time of Tranſplanting is in *September*, or ſo ſoon as the Weather is open in the Spring Seaſon.

SECT. III.

Of the LAURUS-TINUS.

THE *Laurus-tinus* is a Plant whoſe Beauty chiefly conſiſts in the Flowers which adorn it about *Chriſtmas*, and moſt of the Winter Seaſon; it may be raiſed from the Berries, managed in the ſame manner as thoſe of the *Holly*, but the moſt expeditious Way for the propagating of it, is from *Layers*, *i. e.* by laying down the youngeſt Branches of it in the Earth, about the Months of *September* or *October*, which will ſoon ſtrike Root, and afford us

Plants fit for Uſe. It is a quick Grower, but very ſeldom makes a large *Tree*, it is often train'd up to a headed Plant, and introduced among *Holly's* and *Yews* into the Parterre. But I ſhould rather direct that it be planted againſt a Wall or in Wilderneſſes, where it may avoid the Knife for the ſake of its Flowers, which an unskilful Hand often robs it of by untimely Pruning. It is to be noted, That this Plant like all other Exoticks, is naturally inclin'd to Bloſſom about the Time of the Spring in its own Country. I have particularly obſerv'd that all Plants from the *Cape* of *Good-hope* make their ſtrongeſt Shoots, and begin to Bloſſom towards the End of our Autumn, which is the Time of the Spring in that Part of *Africa* they were brought from, and ſo likewiſe all others from different Parts and Climates retain their Natural Courſe of Vegetation, for which reaſon, ſuch Exoticks ſhould be prun'd in our Spring Seaſon, that they may the better diſpoſe themſelves for ſtrong Flowering Shoots in the Winter; but more of this in another Place. *The Laurus-tinus*, altho' it is impatient of Froſt, delights to grow in ſhady and moiſt Places, and flouriſhes well in Loam without the Help of any rich Manure, which will forward its Growth too much, and by that means make it too ſubject to feel Froſty Weather, and alſo to fling away its Sap in uſeleſs Shoots, which ever ſpoils the Bloſſoming of *Trees*, for the ſame Reaſon that Exceſs of Vigour is a Hindrance of Prolificity.

SECT. IV.

Of the BAY-TREE.

THE *Bay*, altho' it may be raiſed from *Layers*, *Suckers* or *Cuttings* yet it grows much better if it be propagated from the *Berries*; however for the greater Satisfaction of my Reader, I ſhall ſpeak particularly of each way of raiſing this Plant. Firſt then, if we propoſe to raiſe this Plant from *Layers*, we muſt bend down the tender Shoots to the Ground, and after having faſten'd them in the Earth with Hooks, cover them four or five Inches with fine Earth: This Work muſt be done about *October*, at which time likewiſe the *Suckers* may be taken from about the Body of this *Tree*, with as much Root as can be got with them, plant them in ſhady moiſt Places, in gravelly Soil, without any rich Mixture, watering them well at firſt Planting, as all Plants ought to be on that Occaſion, chiefly to ſettle the Earth cloſe about their Roots. In *October* alſo we may ſet the *Cuttings* of *Bays* in Pots of fine

Earth two or three Inches deep, and preſerve them under ſome Shelter during the Winter; they will with that Management alone ſtrike Root, without the Help of a Hot-Bed.

IN the next Place, if we deſign to raiſe this Plant from the *Berries*, gather them when they are full ripe, and after having ſpread them abroad to ſweat, keep them till the *February* following in dry Sand, then ſow them on a Bed of Earth freſh dug, and ſift over them ſome freſh natural Earth, about two Inches thick. If after this Work the Weather happen to be moiſt, you may expect them to come up in about ſix Weeks after ſowing; theſe Seedlings require Shelter with Straw or Fern for the three firſt Winters, after which Time they ſhould be tranſplanted, leaſt their Roots run too deep into the Earth, and by that means the Plants may receive Prejudice by removing them. I have ſeen Piramids and headed Plants of *Bays* introduced in Parterre Works, but I cannot adviſe it leaſt they ſhould be injured by hard Weather, which often would be apt to change their Colour, and perhaps kill them. But if by our Skill and Induſtry we have been Fortunate enough to train up ſome of this Kind of *Tree* to handſome Plants, let them be put in Pots or Caſes and houſed in the Winter,

ter, that their Beauty may be preſerv'd. The fineſt Trees of this Kind that I have ever ſeen, either in *England* or Abroad, are now in the Gardens of the *Royal Palace* at *Kenſington*, which are of very great Value: However, if it ſhould be the Deſire of any one to propagate this Kind of *Plant*, who has not the Convenience of a *Green-Houſe* or Place of Shelter for them in the Winter, we may plant them in *Hedges* or againſt *Walls*; and if ſevere Froſts ſhould by Chance diſcolour them, yet let not the Owner be diſcouraged; let the *Plants* ſo injured have their top *Branch* cut off in the Spring, and they will ſhoot out a-freſh.

IN *Holland* and *Flanders* I have ſeen the *Bay* with its *Leaves* finely variegated. Some *Plants* of it I have brought into *England*, which I have increas'd by ingrafting *Branches* of them upon our common *Bay*. But I yet have not ventur'd it to ſtand abroad in the Winter.

SECT. V.

Of the BOX-TREE.

THE *Box-Tree* is very eaſily propagated, either by *Slips*, *Layers*, or *Seeds*. It is a *Plant* very valuable for its Wood, ſo much uſed for Mathematical Inſtruments, Combs, and ſuch like Works, and the continu'd *Verdure* of its *Leaves* makes it an acceptable *Plant* to the Gardener. *Box-Hill* in *Surry* ſhews us the Excellencies of this *Plant*, as well from the Profit of its Wood, as the pleaſing Shade of the *Box-Trees* growing upon it, which are ſome of them ſo large as to equal almoſt any other Sort of Timber-Trees. This *Plant* will make delightful *Hedges* in Gardens, and is, next to the *Yew*, the beſt *Tonſile Tree* for the *Parterre*. As it is a ſlow Grower, and produces a ſmall Leaf, it delights in Chalky Mountains, where it will grow much quicker than it does in our Gardens. It is on thoſe Hills where it ſhould be planted therefore for Profit, tho' a natural Soil in a Garden is rather to be preferr'd, if we would keep it in Shape and within Bounds: The beſt Time of the Year to make *Layers* or *Slips* of it is in *September*, and the *Seeds* of it may be either ſown ſo ſoon as they are full ripe, or laid in *Sand* during the Winter, to be ſown the Spring following: The *Seeds* of this Tree, like thoſe of the *Holly*, may be forwarded in their *Growth* by the *Bran* and *Water*.

BESIDE the common Sort I have been ſpeaking of, I have ſeen one with variegated *Leaves* which makes a very beautiful *Plant* for the *Parterre*, if it be kept in good Order.

THE *Dwarf* or *Dutch-Box* is of extraordinary Uſe for Edging or Bordering of Flower-Beds, or for the making of Scrawl-Work; it will reſiſt the moſt ſevere Weather, and remain good without renewing for above twenty Years; it is much cheaper than Border-Boards, and far more beautiful; but above all, it is to be admired on account of the Profit it will bring to the Owner when he ſhall be inclined to ſell it or tranſplant it. This Sort of *Box*, if it be earthed up every Year, may in four or five Years after Planting be taken up and parted or ſlip'd, and be made to plant about four times as much Ground as that which it ſtood upon. I cannot pretend to ſet down the Price of it, ſince there has not been any certain Standard for its Value. I have bought ſome at 6 *d. per* Yard, and at other times have paid 8 *d.* and a Shilling for the ſame Meaſure, but then we muſt ſuppoſe that the more we pay for it, ſo much the more Ground it ought to plant when it comes to be ſlip'd or parted.

SECT. VI.

Of the L A U R E L.

THE *Laurel* has been uſed for *Hedges*, and ſometimes trained up into headed *Plants*, but is of that Quickneſs in its *Growth* that I cannot recommend it as a proper Companion for the other *Ever-Greens* before-mentioned. I believe, with Mr. *Evelyn*, that this ſort of *Plant* would do much better to be cultivated as a Standard in *Walks* or *Avenues*, where it may have full Liberty to range without danger of the Knife. I am of Opinion this Tree will grow to a very large Size, eſpecially when it has been grafted or budded upon *Black-Cherry Stalks*; which Experiment I have ſeen try'd by my curious Friend, *Robert Balle*, Eſq; and has anſwer'd very well to the Deſign, and keeps its Leaves all Winter; from whence we may believe that it is not any particular Quality in the Juices of a *Plant* which cauſes it to be either ever Green, or otherwiſe, but that a continual Verdure rather proceeds from certain Veſſels which convey the Juices from the *Trunk* into the *Leaves* of Trees, which are more in Number, and much ſtronger and tougher in *Ever-Greens*, than in ſuch *Plants* as ſhed their *Leaves* in

Winter. But this Caſe I ſhall treat of more amply in another Place.

THE *Laurel* may be propagated after the ſame Manner as I have directed for the Raiſing of the *Bay*, either from the *Berries*, or by *Layers* or *Cuttings*; it loves Shade, and will thrive in (almoſt) every Soil; it reſiſts the Weather, and has that Bitterneſs in its *Leaves* that Cattle will not readily annoy it. But Wild-Fowl, ſuch as *Pheaſants*, *Patridges*, *Wood-cocks*, *Black-birds*, and the like, delight to ſhelter themſelves under its Cover in hard Weather, therefore it might be planted in Parks or other Places of the like Nature, for the Increaſe and Preſervation of Game-Fowl.

SECT. VII.

Of the PHILLYREA.

THE Nurſery-Men know five Sorts of *Phillyrea* by the following Names, the *Plain Phillyrea*, the *bloach'd* Kind, the *true Phillyrea*, the *Dutch Silver'd-leav'd* Sort, and the *Gilded Dutch* Kind. The *firſt* or moſt common of theſe may be propagated from the *Berries*, order'd like thoſe of the *Holly*, or it may with the other Sorts be raiſed by *Layers*, which preſently take Root; it delights in a natural light *Soil*, without any Mixture of rich Compoſt. Both this and the *bloach'd-leav'd Phillyrea* are very quick Growers, and make tollerable *Hedges* if they be well ſupported with ſtrong Rails or Stakes, but without ſuch Helps are not capable of reſiſting the Strength of the Winds; but the *true Phillyrea* is better able to defend it ſelf againſt the Inſults of Storms, and its ſlow *Growth* makes it a fit Companion for the beſt *Ever-Greens* in the *Parterre.* I have ſeen *Pyramid* and headed *Plants* of this Sort which have equal'd in their Beauty any other of the Garden-Race, but the *plain* and *bloach'd* Leav'd Kinds are with great Difficulty kept in any Form. The *Dutch Silver-leav'd* and *gilded* Sorts are valuable for the ſmallneſs and elegant *Variegations* of their *Leaves,* they may be eaſily trained into any Shape, but cannot abide the Froſt, therefore are not ſo properly the Inhabitants of open Gardens, as of Places of Shelter. The Time of laying the tender Branches of theſe and all other *Phillyrea's* into the Earth, is in *September,* by which Means we may greatly increaſe this Kind of *Plant.*

SECT. VIII.

Of the ALATERNUS.

THE *Alaternus* of the Gardeners differs from what they call *Phillyrea*, by being narrower Leav'd; and from the *Privet*, by having Notches on the Edges of its *Leaves*. Mr. *Evelin* gives us one very matereal Remark of it, *viz.* that the *Seeds* of the *Alaternus* come up in a Month's time after Sowing; he directs, it ſhould be planted out, at two Years *Growth*, either for *Hedges*, or to be train'd up into figured *Plants*; the ſudden *Germination* of the *Seeds* ſhews it not to be a *Phillyrea*, whoſe *Berries* lie a long time in the Earth before they ſprout; it may be increas'd alſo from *Layers*, treated like thoſe of the *Phillyrea*, and delights in the ſame Kind of *Soil*.

SECT. IX.

Of the JUNIPER.

OF the *Juniper* we have two Kinds known to our Gardeners, the *Common*, and what they call the *Swediſh Juniper*; both of them reſiſt the moſt ſevere Froſt, and for that reaſon, as well as for their beautiful *Green*, ſhould have their Place among other *Ever-greens* of the *Parterre.* The Smallneſs of their *Leaves* is ſuch, that an ingenious Workman may train them up into any Shape, and by often Cutting or Sheering them, they will be ſo cloſe, that no other *Plant* can be ſaid to exceed them in that Reſpect. It delights in barren *Soil*, ſuch as *Heaths* or *Downs*, where I have ſeen the common Kind grow freely and plentifully. The *Berries* ſhould be ſown about *March*, in light Ground without watering them, or giving them any rich Manure: They come up in two Months after Sowing, and may remain two Years in the *Seed-bed*, before they are tranſplanted, taking great Care to keep them free from Weeds. I remember to have heard of a *Juniper-Tree* above forty Foot high; and I think Mr. *Evelin* has ſomewhere mention'd one of that Sort which made an Arbour of eleven Foot high in ten Years time.

SECT. X.

Of the PIRACANTHA.

THE *Piracantha* has many Perfections which are not found in other *Ever-greens* of the *Parterre*, and yet to my great Wonder, is very little taken Notice of about *London*, inſomuch that I know not any one Nurſery where it is cultivated; beſides the Beauty of its *Leaves*, the Bunches of white Bloſſoms which it produces in *May*, are very Ornamental, and its *Coral*-like Beads, which hang upon it in Cluſters all the Winter, affords us a moſt delightful Proſpect; to all theſe Perfections we may add the Strength of its *Thorns*, which makes it one of the moſt uſeful *Plants* for Hedges, that I know of. I have ſeen ſome *Plants* of this Kind, train'd into *Balls* and *Pyramids* almoſt cover'd with the Scarlet Berries, when Nature ſeem'd to reſt in other things; and indeed was I to make a Winter Garden, this Tree would be no ſmall Contributor to the Ornament of it; but let us now proceed to the *Culture* of this beautiful *Plant*: It may be raiſed either from the *Berries*, or from *Layers* or *Cuttings*. The *Berries* when they are full ripe, ſhould be order'd like thoſe of the *Holly*, and are ſubject to lie as long in the

Earth; but I would adviſe that they be given to Fowls to eat, that by paſſing through their Bodies, they may the ſooner come up, and be better prepared to *vegetate*. In *Devonſhire*, where this Plant abounds, it has been obſerv'd that ſuch Fowl as feed upon the *Berries*, ſcatter them over the Country, where they vegetate exceedingly, but are very difficult to tranſplant, having few *Fibres* at their Roots; therefore when they are come up and have ſtood a Year or two at moſt, they ſhould be planted out where they are to remain. In the Removal of this, and other Trees of the like Nature, we muſt be careful to keep the Roots from drying before they are put again into the Ground. If we would raiſe theſe *Plants* from *Layers*, lay down only ſuch *Branches* as are tender and of the laſt Shoot, which Rule muſt be obſerv'd in the laying of all *Evergreens* whatever; for the more woody *Branches* will not ſtrike Root by any means. About *May* or *June*, we may plant *Cuttings* of the freſh tender *Twigs* in Pots of fine Earth, watering them frequently, and keeping them from the Sun 'till the following Winter, ar which time a warm Expoſure will be helpful to them, and prepare them to make a ſtrong Shoot in the Spring. *Plants* raiſed in this Manner may be tranſplanted with greater Eaſe and leſs Hazard, than thoſe raiſed from *Seeds* or by *Layers*, as I have experienced. The *Piracantha* delights in a dry Gravelly Soil, and will grow to be a large Tree, if rightly manag'd and kept from Dung or other rich Manure which will deſtroy it.

SECT. XI.

Of the ILEX.

ALtho' I have mention'd this *Plant* in the former Part of this Work to be a valuable Tree for Timber, yet I cannot well avoid in this Place to take Notice of the great Uſe which might be made of it in Gardens. I have ſeen *Pyramid Plants* of it near Thirty Foot high, and there are *Hedges* of it now growing in *England*, of above that Height, which have been ſown but a few Years ſince. Such Shelter would be much more preferable than the *Dutch Elm* or *Horn-beam*, for the preſerving of *Orange-Trees* from the Sun, and Blaſts, and might be made uſe of to defend our Fruit Trees from the Blights which too frequently attend the North-Eaſt Winds of the Spring: See the *Culture* of this Tree in the *Firſt Part*: The *Cork-Tree* muſt be propagated after the ſame manner, and is much like it.

SECT. XII.

Of the ARBUTUS *or* STRAWBERRY-TREE.

THE *Arbutus*, altho' an *Exotick Plant*, thrives very well in our Climate; it is a moſt beautiful Tree, bloſſoming twice a Year, and has its *Fruit* ripe in the Winter, yet notwithſtanding theſe Excellencies, it is little ſought after, perhaps as it is a Stranger, and not ſuppoſed to be hardy enough to reſiſt our *Froſts*. I have heard of it growing plentifully in *Ireland*, and have ſeen very large Trees of it in ſome Gardens about *London*. The *Plant* indeed is not ſo well diſpoſed, to be train'd up in nice-ſhaped *Trees*, as many others, but it makes a moſt agreeable *Hedge*, and is very Ornamental in *Wilderneſs Works*. It loves a light Gravelly Soil, and may be raiſed either from the *Seeds* or *Layers*. The *Fruit*, (which to all appearance, is a *Strawberry*, but rather taſting like the Pulp of a *wild Service*,) muſt be gather'd about *Chriſtmas*, and laid to dry for a Month, and then bruis'd and mix'd with Sand, in order to be ſown in Pots of light Earth, and cover'd about a quarter of an Inch with ſifted *Mould*. This *Work* muſt be done in *March*. The gentle Heat of a Hot *Bed* will much help the Germination of the *Seeds*, which ſhould be frequently ſprinkled with Pond Water till they come up.

THE moſt tender Shoots of this *Tree* may be lay'd down about *September* in fine Earth, and will ſtrike Root in a Year's time, if they are kept moiſt by frequent Waterings, but will not be ſtrong enough to tranſplant till the Spring following, and muſt then be kept in the Shade for two or three Months.

SECT. XIII.

Of the Italian *GREEN-PRIVET.*

THIS *Plant* was brought from *Italy*, by Mr. *Balle*, among other Curioſities of the like Nature; its *Leaves* are not unlike thoſe of the *Olive*; among other Names given it by the *Italians*, it is call'd the *Olivetta*. This *Plant*, altho' it is a quick Grower, makes an admirable Hedge, if it be often clipp'd; and tho' it be a Foreigner, deſpiſes the Violence of our Froſts, and maintains its Verdure all the Winter: I have not yet ſeen the Flowers of it, but have had many of the *Berries*, which ſomewhat reſemble the Fruit of the *Mirtle*. We muſt ſow the *Berries* of this *Plant* in *March* about an Inch deep in light Earth, watering them frequently 'till they come up, and tranſplant them from the Seed-

Bed the ſecond Year after ſowing. I ſuppoſe a hot Gravelly Soil to be the moſt proper for it, having planted it in that ſort of Ground where it has made Shoots of four Foot long in one Summer.

NOW beſide the *Ever-greens* I have mention'd for *Hedges* and *figur'd Plants*, agreeable to *Parterre* Works, it may not be amiſs to take Notice of ſuch others, as I have ſeen propagated by the Curious for different Uſes; the *Olive*, *Lintiſcus* and the *Piſtachio* may be planted againſt Walls expoſed to the South Sun, and will thrive very well. I have ſeen perfect *Fruit* of the *Olive* in the Gardens at *Cambden*-Houſe, *Kenſington*, and in many other Places near *London*; it is a *Plant* hardy enough to maintain its ſelf in our Climate without any Shelter, and may be propagated by laying down the young *Branches* in the Earth about *March*.

THE *Lentiſcus* is a *Plant* commonly kept in Green-Houſes, but is ſometimes planted againſt a warm Wall without Doors; it is raiſed from the *Berries*, which are brought from *Italy* and other Places in the *Mediterranean* Sea. The *Piſtachio* likewiſe is a *Plant* which will thrive well enough in our Climate, and may be either raiſed from the *Nuts* or *Suckers*, managed as the other *Ever-greens* I have mention'd before. This laſt *Tree* is commonly planted ed againſt a Wall, and in that Station I have ſeen it bear Fruit at the late Biſhop of *London*'s Gardens at *Fulham*; I have ſeen it alſo growing in the Wilderneſs, belonging to the Earl of *Peterborough* at *Parſons-Green*, where (altho' it bore Fruit plentifully) the Name of it was not known 'till laſt Year.

THE ſeveral Kinds of *Firrs* are likewiſe Ornamental in Wilderneſs Works, and are beneficial in Sylvan Plantations; there are many Kinds of them which are all raiſed from Seeds ſown in *March*; they grow freely in any Ground, and ſhould have their *collateral Buds* broke off while they are young and tender, by which means the *Timber* will be free from *Knots*.

IN the next Place, the *Cypreſs*, *Lignum Vitæ*, and *Cedar of Libanus*, with others of the like Nature, may be propagated as the former for Wilderneſs Works.

AND now, as I have ſet down the Culture of all ſorts of *Ever-greens* which the Curious may deſire to propagate for *Parterre* and *Wilderneſs Works*, I ſhall conclude this CHAPTER with a Word or two concerning *Graſs Turfs* for *Verges* or *figured Works* in Gardens, which I think cannot be ſo properly introduced in any other part of my Deſign as in this place, ſeeing how much Works in Graſs contribute from their beautiful *Ever-green* to embelliſh a *Parterre.* The beſt times for laying of Graſs-Plats are the Months *March* and *September*; and the beſt *Turfs* for that Uſe are ſuch as are taken from the moſt barren Lands, as *Heaths* and *Commons*, where the *Sword* or *Blade* of the *Graſs* is narrow and ſhort. To lay a Graſs Walk, let the Ground be well dug and level'd; then after it is trodden down, or beaten, and raked by a nice Hand, lay down your *Turfs* cloſe together, and *role* them with a Wooden *Roler*, for five or ſix Mornings ſucceſſively, 'till they are well preſs'd, and the *Turfs* begin to ſtrike Root; by this Method a Gentleman may quickly be Maſter of good *Graſs Walks* or other *Graſs Works*, and enjoy a continued Delight from them, eſpecially if they lie moiſt, and are ſomewhat ſhelter'd from the ſcorching Heat of the Sun, which is too apt to tarniſh them I ſhall now proceed to ſpeak of ſuch Flowering Trees and Shrubs, as are proper for the adorning of Gardens.

CHAP.

CHAP. III.

Of FLOWERING-TREES and SHRUBS, *their Culture and Uſe in Gardens.*

AS I eſteem *Flowering-Trees* and *Shrubs* to be the next after *Ever-greens*, which a curious Perſon will be deſirous of propagating in his Garden; ſo in the Culture of them, I ſhall be no leſs particular than I have been in the foregoing Chapter of the Management of *Ever-greens*.

I ſuppoſe no one is ignorant that the greateſt part of theſe *Flowering-Trees* and *Shrubs*, which are at this time ſo well known to our Gardeners, are *Exotics*, and it is well-worth our Enquiry what Climes they were at firſt brought from, that for the better Embeliſhment of our Gardens, we may ſtill ſeek after many other Varieties of the like Kinds, in thoſe Countries whoſe natural State of Weather moſt nearly reſembles the Properties of our Climate.

I find that Plants of *Virginia*, and even thoſe of the *North* Parts of *Carolina*, will bear our Froſts, if they are managed with

Judgment. The *Tulip-Tree*, for Inſtance, which flouriſhes ſo well in the Earl of *Peterborough*'s Wilderneſs at *Parſon's-Green*, is a *Virginia Plant*, and yet finds no difference between the Degrees of 38 and 52. In its native Country, it is an Inhabitant of the Woods, and in my Lord *Peterborough*'s Garden it flouriſhes in a Wilderneſs, but I have known it planted in a much warmer, and more open Expoſure, and it has periſh'd; this ſhould be always conſider'd by the Gardener, to plant every *Tree* in a Wood which is natural to a Wood, and upon a Plain that which is the Native of a Plain. I might here ſet down the moſt proper Method for bringing over ſuch curious *Plants* as grow in Foreign Countries into *England*, and might give ſome Rules for the Naturalizing them when they are with us; but as I have now by me ſome Papers purely relating to the Culture and Management of *Exotic Plants*, which I am perſwaded to make publick, I muſt crave my Reader's Patience 'till I preſent him with all that I know relating to that Subject, and at preſent only give him the neceſſary Direction for the Management of thoſe *Foreigners* which are already naturalized to our Country.

THE *Plants* which will make the Contents of this Chapter, as the moſt worthy our Care, are *Jaſmines*, *Honey-Suc-*

kles, *Lilac*, *Syringa*, *Roſes*, *Guilder-Roſe*, *Brooms*, *Liburnum* *Mezereon*, *Spireas*, *Arbor-Judæ*, *Paſſion-Tree*, *Senna's* and *Tulip* Tree.

SECT. I.

Of the JASMINE.

OF the *Jaſmine* there are three ſorts, which bear our Froſts, known to the Gardeners, and diſtinguiſh'd among them by the Names of the *common White Jaſmine*, the *Yellow Jaſmine*, and the *Perſian Jaſmine*. The firſt of theſe is capable of reſiſting the moſt ſevere Weather, it is generous in its Growth, ſhooting ſometimes more than ſix Foot in a Summer. It produceth its white fragant Flowers about *June*, and continues Bloſſoming 'till *September*; it is propagated from *Layers* or *Cuttings* with great Facility, and will grow in any *Soil*. The Time of *Laying* the young *Shoots* of this *Plant* into the Earth is about *September*, and at that time we may likewiſe plant *Cuttings* of it about a Foot long, always taking Care that two *Knots* be under Ground, for it is juſt below the *Buds* that the *Roots* ſpring forth, *i. e.* from the Place where the *Leaf* of that Summer had join'd it ſelf to the *Branch*. This *Plant* is ſo delightful that I think no curious Perſon can be without a large Plantation of it, either to plant againſt *Walls* or *Trees*, or elſe to train up into *headed Plants*. I have ſeen this ſort of *Jaſmine* planted in Hedges of *Dutch Elm* and *Hornbeam*, curiouſly intermixing it ſelf with them, and yielding a moſt agreeable Entertainment to the Owner, by means of its pretty *Bloſſoms* and their delightful *Odour*. When it is train'd into headed *Plants*, and kept in *Potts*, it ſerves to adorn the Chimnies in the Summer Months, and it is alſo of uſe to *engraft* the *Spaniſh White Jaſmine* upon, or thoſe of its own Kind with *variegated Leaves*.

THE *Yellow Jaſmine* has its Leaves more ſhining than the former, and its Flowers not much unlike thoſe of the *Yellow-Indian Jaſmine*. I have ſeen but few Plants of it about *London*, altho' its Beauty is, in my Opinion, ſurpaſſing the former; it is hardy enough to endure the moſt ſevere Weather of our Clime, and may be propagated from Layers, like the other. I remember to have ſeen it proſper well againſt a *Wall* in a light ſandy *Soil*, and I am apt to believe the *Indian Jaſmine* might be grafted upon it, as the Smell of both their *Flowers* are ſo nearly the ſame; which ſeems to inform us, that the Parts and Juices of one and the other are alike, for if a Flower contains the moſt refin'd *Juices* of a *Plant*, and if it is allow'd that the Odour of that Flower proceeds from certain Vapours, ariſing from the *Juices* contain'd in it, then it ſeems reaſonable to believe, that when we meet with Flowers of different *Plants*, which touch the Organs of Smelling in the ſame manner, the *Juices* of each of them muſt then be alike, and the *Veſſels* and *Glands* through which they have paſs'd from the *Root*, muſt be nearly the ſame, either in Figure or Quality, and ſometimes in both.

THE *Perſian Jaſmine* bears Flowers of a Purple Colour, but ſeldom makes a large *Plant*, it will bear the Weather, and make a pretty ſhow in Wilderneſs Works, among other flowering *Shrubs*; it may be raiſed from *Layers* or *Suckers*, and loves a light *Soil*.

SECT. II.

Of the WOOD-BIND *or* HONEY-SUCKLE.

THE Gardeners cultivate ſeveral kinds of *Honey-Suckles*, diſtinguiſh'd among them by the Names of *the Forward Blowers*, *Later Blowers*, *Scarlet Flower'd* and *Ever-green Honey-Suckle*; theſe are all of them *twining Plants*, and are raiſed from *Layers* or *Cuttings*, order'd like thoſe of the *Jaſmine* in *September* or *October*;

ber; they love Shade, and are the Natural Inhabitants of Woods, where the Neighbouring Trees ſerve them for their Support; ſome or other of them ſhew us their *Bloſſoms*, and perfume the Air with their fragrent Odours, throughout the whole Summer, and therefore it would be needleſs for me to adviſe a Gardener to provide himſelf with every Variety of it, which I have mention'd. The *Flowers* are in themſelves Beautiful, and as the *Plant* is a quick Grower, let it be planted about Trees in Avenues, to intermix its *Bloſſoms* among the *Branches* of ſuch as the *Elm*, *Oak*, and the like. Now altho' the *Honey-Suckle* is a *twining Plant* like the *Jaſmine*, yet it may be train'd up into a *Standard*, and has an admirable Effect, as a *headed Plant*, in the moſt remote Parts of *Parterre* Works; for to plant it among *Evergreens*, in or about the Center of ſuch a Garden, would wound the Proſpect for many Months of the Year, when it was vacant of Leaves.

IF I may be allow'd to direct the Fancy of other People, I would adviſe that every ſort of Flowering *Shrub* ſhould be trained into *headed Plants*, and planted in Garden Pots, that when they are in *Flower* they may be ſet in the Borders between the *Evergreens*, and removed as ſoon as their *Bloſſom* is over, to make room for others.

SECT. III.

Of the LILAC.

OF the *Lilac* there are two ſorts, commonly known to the Gardeners by that Name, *viz.* the *Blue* and the *White.* The Botaniſts indeed call the *Lilac* by the Name of *Syringa* or *Pipe-tree,* but the Gardeners give the Name of *Syringa* to another Plant; therefore as my Deſign here is chiefly dedicated to the Uſe of Gardeners, I ſhall call every Plant by the Name they know them by, and at the End of my Work endeavour to reconcile the *Botaniſt* with the *Gardener*, by an Index of Names in *Latin*, *Engliſh*, and other Languages now in Uſe. The *Lilac* then is a Plant which grows to a pretty large *Tree*, bearing its Bunches of *Blue*, or rather *Purple Bloſſoms*, like Plumes of Feathers, in *May*; I know not any Sight more agreeable than this *Tree* when it is full of *Flowers*, and altho' it is very common, is well worth our Propagating. Small Walks of theſe *Trees* are very pleaſant, and they are no leſs Ornamental in the Quarters of *Wilderneſs Works*, eſpecially if the *White* flowering Kind be judiciouſly intermix'd with them. They may be raiſed by *Laying* down the young *Branches* in *March*, or by taking off the *Suckers*, and planting them in a light *Soil* in the ſame *Month*, or about *September*.

SECT. IV.

Of the SYRINGA.

THE *Syringa* has two Qualities which were taken Notice of by that Learned and Curious Botaniſt the late *Biſhop of London*, *viz.* That the *Leaves* taſted like *Green Cucumbers*, and the *Bloſſoms* had the Odour of *Orange-flowers*; this *Shrub* is propagated as well for Wilderneſs Quarters as for headed Plants, and is often planted in Pots to adorn Chimnies in the Summer. They produce their Bunches of fragrant white *Bloſſoms* in *May*, and continue *Blowing* for ſix Weeks. I have not yet try'd to raiſe them from *Seeds*, nor indeed would it be worth while, ſeeing how apt the *Root* is to put out *Suckers*, which may with great Eaſe be taken off about *March* or *September*, and tranſplanted. The *Syringa* will grow almoſt any where, and if planted in a ſhady Place will ſhoot vigorouſly, but being much expoſed to the Sun, will produce *Flowers* in greater Abundance.

SECT. V.

Of the ROSE-TREE and its Kinds.

WE have more Variety of *Roſes* propagated by our Gardeners, than of any other Flowering *Tree* or *Shrub*; the Flowers are moſt delightful for their agreeable Odour and Beauty, I have ſeen one or other of them *Bloſſoming* for ten Months of the Year, without uſing any great Art to alter the natural Seaſon of their *Blowing*. The Gardeners diſtinguiſh them by the following Names, firſt the *Cinnamon Roſe*, which is the moſt forward Blower; *the Monthly Roſe*, and the *Cluſter Monthly Roſe*, which if they happen to be planted againſt a warm Wall, will begin to blow about the latter End of *March*, or the Beginning of *April*, and continue to produce *Flowers* for almoſt three Months; and if after they are out of *Flower* they have the Tops of their Branches prun'd off, we may expect a ſecond Crop of *Roſes* from the ſame *Trees* in *Autumn*, which will continue their *Bloſſom* almoſt till *Chriſtmas*, if the Weather be open. The next after theſe is the *Damask Roſe*, which will begin its *Bloſſom* in *May*, and continue Flowering for above ſix Weeks. The *Roſamundi*, or *York* and *Lancaſter*

Roſe, with the *White*, *Red*, and *Yellow Roſes*, begin their *Bloſſom* ſomewhat later than the *Damask*: And laſt of all, the *Centifol*, or *Province Roſe*, ſhews us its ſurprizing *Flowers*; but beſides the ſeveral ſorts which I have here ſet down, there are many others which I have not yet ſeen. That curious and incomparable Patroneſs of Botany, the late *Dutcheſs of Beaufort*, has told me of 16 different Sorts, which her Grace cultivated in her Gardens at *Badminton*; but altho' the ſeveral ſorts of *Roſes* differ in their times of *Flowering*, yet are they all propagated after the ſame manner; they love a ſtrong holding Ground, and delight ſo much in moiſt Places, that they will even grow in Water; they may either be raiſed from *Layers* or *Suckers*; the firſt may be *Layn* down in *September*, and the *Suckers* may be taken from the old *Roots* in that *Month*, or about *March*, and tranſplanted immediately, before their *Roots*, which have but few *Fibres*, grow dry; but in caſe Neceſſity obliges us to keep them out of the Ground for ſome time, lay their *Roots* in Water for Five or Six Hours before *Planting*. The *Roſe-Tree* may be either Cultivated for the Quarters of Wilderneſs Works, to be planted there among other *Flowering Shrubs*, or trained up into *Standard Plants* for *Pots*.

SECT. VI.

Of the GUILDER-ROSE.

THE *Guilder-Roſe* bears its Bunches of *White Bloſſoms* (as big as a large Tennis-Ball in *May*. The *Plant* ſeldom riſes very high, or is capable of being kept in any regular Form, therefore is chiefly propagated for *Wilderneſſes* or other wild Places; it delights in a holding Land, and may be rais'd from *Suckers* taken from about the old *Root*, either in *March* or *September*.

SECT. VII.

The SPANISH BROOM.

THE *Spaniſh Broom*, altho' there is no great Beauty in its *Leaves*, yet the *Spikes* of *yellow Flowers* which it puts forth in *June* and *July*, makes it a *Plant* very deſirable in our Gardens. It is an irregular *Plant*, by no means to be brought into any Form by the Gardener. It may be planted in Wilderneſs Works, with other flowring *Shrubs*, among which it makes a good Show. We may raiſe it from *Seeds* ſown in *March* in Light Earth, and alſo by laying down the tender Branches in the ſame Month, and cutting them at the

Joynts after the manner of *Carnation-Layers*; but this laſt way is not ſo certain, and more troubleſome than the raiſing of them from *Seeds.*

I cannot forbear taking notice in this Place, of the common *Engliſh Broom,* and the *Furze-Buſh,* as Plants well enough worthy our Care; the firſt to mix with the Shrubs of the Wilderneſs, and the other to be train'd into *Figur'd Plants*; theſe are both raiſed from *Seeds* ſown in *March,* and will not bear tranſplanting after they are one Year old, without great Care. I have ſeen ſome *Plants* of the *Furze-Buſh* cultivated in Gentlemen's Gardens, not any ways Inferior to the Beauties of the moſt valuable *Ever-greens*; it is tonſile at the *Yew,* and in my Opinion, exceeds it in one reſpect, *i. e.* that it *Bloſſoms* in all Seaſons of the Year; and was it not ſo common, I doubt not but it would be more frequently planted in our Gardens than any other *Evergreen.* If it be kept well cut, it makes moſt beautiful and Impenetrable Hedges.

SECT. VIII.

Of the LABURNUM.

THE *Laburnum* is an agreeable *Shrub,* or rather a little *Tree.* I have ſeen it above Twenty Foot high, cover'd with its beautiful Strings of Yellow Flowers in *May* and *June*; and yielding plenty of Fruit which ripens about *September*; this *Plant* reſiſts our ſevereſt Froſts, and will grow in the moſt open Expoſure, as well as under the Shade of large *Trees*; it is commonly planted among the other Flowering *Shrubs* of the *Wilderneſs*, and may be eaſily raiſed from the *Seeds* ſown in *March*, and tranſplanted without Difficulty two Years after it is come up.

SECT. IX.

Of the MEZEREON.

THE Gardeners know two ſorts of *Mezereon*, *viz.* That with the *Red Flower*, and the *White Flowering Sort*: The firſt is common enough in every Garden, but that with the *White Flower* is rare; they are both of them *Dwarfs*, ſeldom riſing higher than three Foot, but have two Excellencies which make them more valuable than much taller *Trees*, their *Stalks* are cloathed with the *Flowers* in *January*, and the Air is then perfum'd with their delightful *Odours*; they remain a long while in *Bloſſom*, and are afterwards no leſs beautifully adorn'd with their *Fruits*. I know no other way of propagating them, than by ſowing the *Seeds* in *March*, if you can ſave them from the Devouring Birds which delight in them. I have eat ſome of the *Berries*, which were not unpleaſant to the Taſte, but about an Hour after I had ſwallow'd them, I found an extraordinary Heat in my Throat, which caus'd a violent burning Pain for above Twelve Hours. It would be well enough worth our Enquiry, Whether the *Seeds* of all forward blowing *Plants* are not hot, in proportion to thoſe of the *Mezereon?* And, Whether their extraordinary Heat is not one means of their early *Sprouting?* This *Plant* may well enough be introduced into the *Parterre*, as it is a ſlow Grower, or in *Wilderneſs Works*, for its delightful *Bloſſoms*, but chiefly into a *Winter-Garden*. A Loamy *Soil* is moſt proper for it.

SECT. X.

Of the SPIRÆA FRUTEX.

THIS *Plant*, known to the Gardeners by the Name of *Spiræa Frutex*, bloſſoms about *Auguſt*, yielding Spikes of Flowers of a Pink Colour; the *Shrub* ſeldom exceeds 3 Foot in height, it is beautiful in its *Flower*, and is a *Plant* which ſhould not be wanting in a Garden. It may be propagated from *Suckers* taken off in *March*, and planted in a light *Soil.*

SECT. XI.

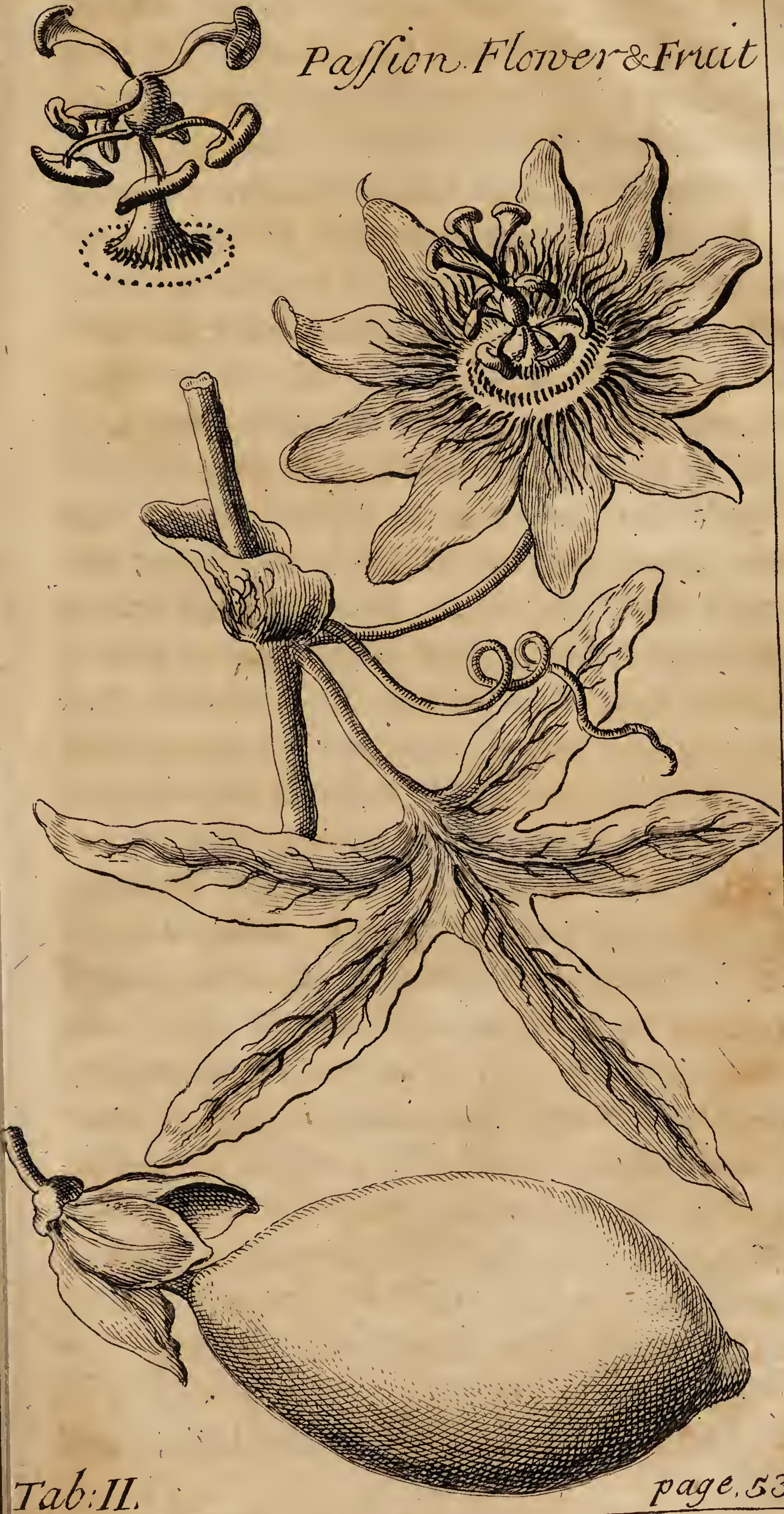
Of the ARBOR JUDÆ.

THIS *Plant* is very common in the moſt *Southern* Parts of *Europe*, but I have receiv'd the *Seeds* of it alſo from *America*; (I think from *Virginea*) I have ſown them in *March*, and rais'd great Numbers of them, and they are now common enough in moſt curious Gardens. This *Plant* will riſe very high, even to equal a pretty large *Tree*, but is more frequently planted againſt a Wall with us, than in the open Ground. It bears its beautiful Roſe-colour *Bloſſoms* in Cluſters, about *March* or *April*, even before the *Leaves* are open'd. The late Learned Biſhop of *London* eat of the *Flowers* in his Salads, and had a very large Plant of it againſt a Wall in his Garden. The *Plant* is hardy enough to reſiſt our Froſts, and I doubt not but would do well in *Wilderneſs Works*, among other Flowering *Shrubs.* It loves a Loamy *Soil.*

SECT. XII.

Of the MARACOC, *or* PASSION-TREE.

THERE are ſeveral Sorts of *Paſſion-Trees*, ſome of them *Ever-greens*, others *Perdifols*, others dying to the Root every Winter, and others which are Annual *Plants*. I have reckon'd near Thirty Sorts of them at the Phyſick Garden at *Amſterdam*, where were the greateſt Varieties of them that ever I have ſeen. But as it is not my purpoſe here to particulariſe any ſort of *Plant* which is not capable of reſiſting the Weather of our Climate without ſhelter, ſo I ſhall only take Notice of one ſort, commonly known to our Gardeners, and endeavour to rectify a Miſtake concerning the *Paſſion-Tree*, which I believe many are poſſeſs'd of. It is ſaid that we have at leaſt two hardy kinds of them in *England*, *viz.* The Fruit-bearing kind, and the common ſort which bears no Fruit; but this is a Miſtake, they are both one, but the difference of Culture makes one Barren, the other Fruitful. But before I proceed to ſet down the Culture of this *Plant*, it may perhaps be expected I ſhould ſay ſomething of the *Flower* and *Fruit*, which are ſo remarkable, as well for their ſingular Beauties, as for the ſtrange Account given of the *Flower* by the *Spaniſh* *Friars*, Paſſion Flower & Fruit



Tab: II.

page. 53.

Friars, upon their firſt Diſcovery of it in the *Weſt-Indies.* The *Flower* is about four Inches over when it is full blown; it has ten white *Petals*, within which are placed round about the bottom of the *Stile* two Rows of *ſtaminous-like* Threads, of a *purple* Colour; the *Stile*, which ſomewhat reſembles the Pedeſtal of a Pillar, divides itſelf on the Top into Three Parts, which turn their Mouths towards the bottom of the *Flower*; they are of the Colour of *Indigo*; beſides theſe three *Tubes*, juſt below that part of the *Stile* where they unite, are placed five *Stamina*, ſpreading themſelves in a Star-like Figure, with yellow *Apices* on their Points. At the Foot-ſtalk of every *Flower* is a *Whirle*, or *Claſper*, and to that is join'd the *Leaf* of the *Plant*, deeply cut on the Edges. All which ſee in the *ſecond Table* of this Part. It is called the *Paſſion-Tree*, for that, by the Contrivance of the *Friars*, who in a counterfeit Figure of it, when it was firſt diſcover'd, added ſome things wanting in the Natural *Flower*, they made it, as it were, an Epitome of our Saviours Paſſion; The Story perhaps as I have it, may not be unacceptable to my Reader. The ten *Petalls*, ſay they, repreſent the ten *Apoſtles*, and at the ſame time put the Queſtion, that there were twelve, but they anſwer, That *Judas* had hang'd himſelf, and *Peter* had deny'd his Maſter: The *ſtamineous-like* Parts, which ſpread themſelves on the Flower, they liken to a *Glory*, and the ſmall *Purple Threads* which ſtand round the Bottom of the *Stile* is a ſuppoſed *Crown of Thorns*: The *Stile* which is in the Middle of the Flowers, ſerves them for the *Pillar*, to which they ſay, the *Jews* bound thoſe Malefactors, whom they ſcourged; and that they may not want any part of the Story, they turn the *Claſper* into a *Cord*, and the *Leaf* into a *Hand*: The three Diviſions on the Top of the *Stile*, they turn into three *Nails*, and taking off one of the five *Stamina's* with its *Apex*, calls it a Hammer, and the *four* others remaining makes a *Croſs*; the three *Alabaſtries* at the Bottom of the Flower, are ſaid to repreſent the *three Soldiers* who caſt Lots; and the Time between the *opening* and *ſhutting* up of every *Flower* being juſt *three* Days, is enough to compleat the Story. Thus ſuperſtitious Perſons, *ſemper ſibi ſomnium fingunt*. The Old Herbariſts have mention'd ſomewhat of this Story, but I found it mightily improv'd when I was at *Bruxelles*, even beyond what I have here mention'd.

BUT to proceed to the Culture of this *Plant*; that it may bear Fruit, we muſt plant it in very moiſt and cool Places where it may be continually fed with Water; this I had from the Curious Mr. *Adam Holt*, Gardener to the late Biſhop of *London*, who ſhew'd me a Letter from the *Weſt-Indies*, from whence I learnt it was an Inhabitant of *Swampy* Places. I have ſince that time ſeen a Tree of this ſort with above three Hundred ripe Fruits upon it, at Mr. *Green's*, a very Curious Nurſery-Man at *Brentford*, which was planted in Cow-Dung, and had from time to time the Place about it renewed with the ſame cooling Soil. The Fruit were ſhaped like Lemons, and of the ſame Colour; they were fill'd with a beautiful red Pulp and Seeds, like the Fruit of the Pomgrenate, and were not diſagreeable to the Taſte. But the largeſt Fruit of this *Plant*, which I have yet ſeen, was ſent ſome time ſince to the *Royal Society*, by a Gentleman, I think living ſomewhere in the *Weſt* part of *England*, with an Account of his Method of raiſing them. He had a large *Tree* againſt one ſide of his Houſe, which happening to grow over a Drain that went from his Kitchen, and lay ſo ſhallow, that the *Roots* of his *Paſſion-Tree* found their Way into it, the *Tree* then began to produce Fruit.

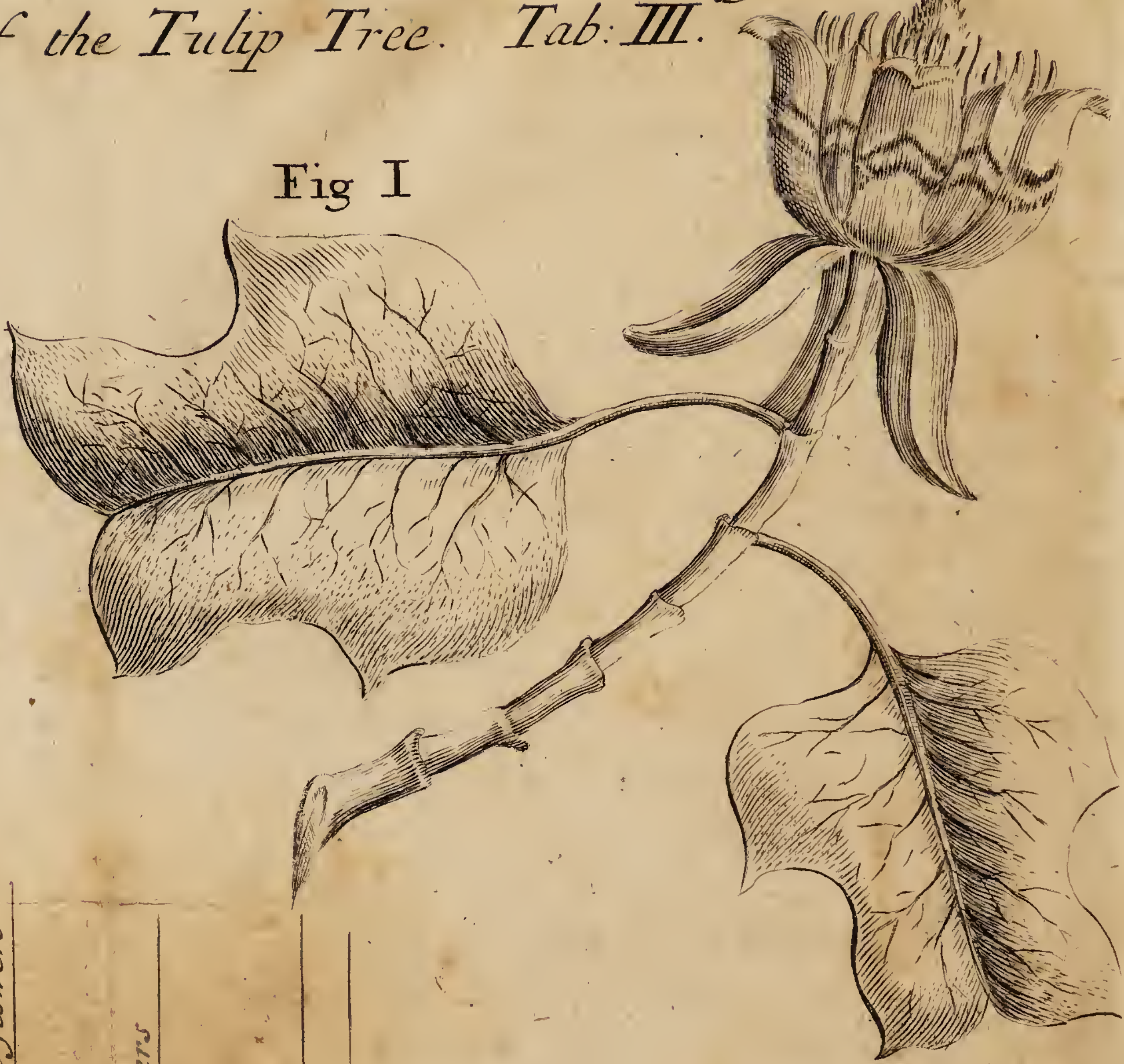
FROM theſe Obſervations I was inform'd of the moſt proper way to Cultivate this *Plant* for the Production of its

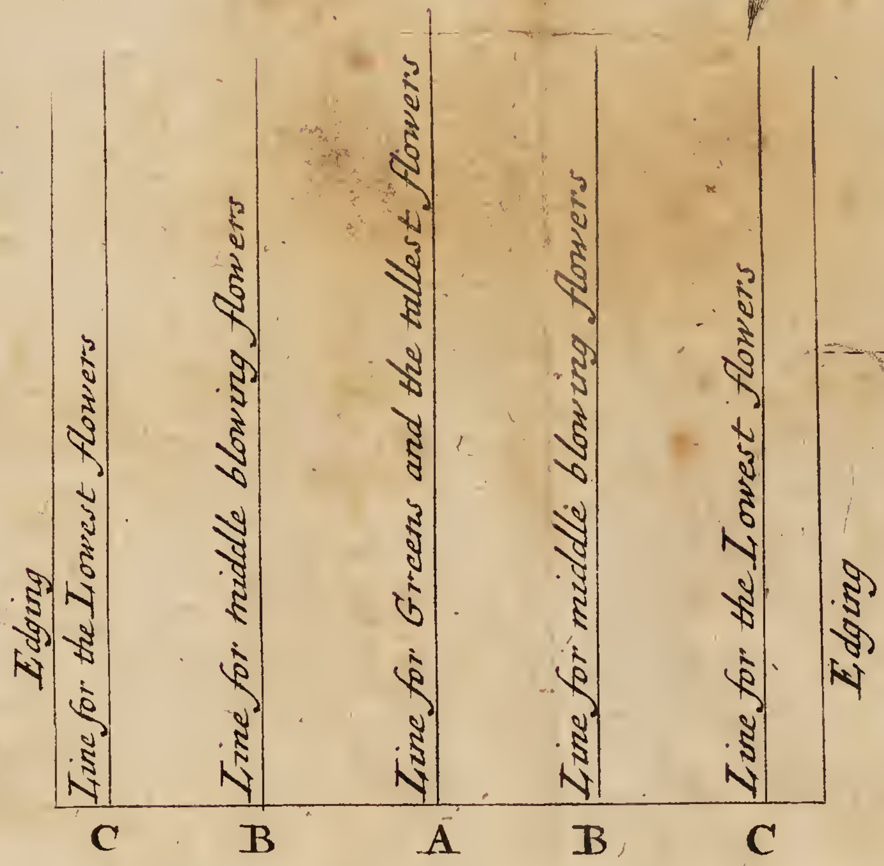
Fruit, and the Directions I have given to ſeveral of my Friends to lay Plenty of Cow-Dung about the Roots, and even then to keep it frequently water'd in the Flowering Seaſon, has been ſufficient to ſhew them Fruit enough to ſatisfie their Curioſity.

WE may raiſe this *Plant* either from the Seeds ſown in *March*, or by Layers in the ſame Month; and every Cutting of it about *May* or *June* will ſtrike Root, if they be planted in fine Earth. It is ſo quick in its Growth, that I have ſeen ſome Branches of it about eighteen Foot long in one Summer, and is ſo hardy, that the moſt ſevere Froſts of our Clime will not deſtroy the Roots, altho' perhaps the *Plant*, to all Appearance, has periſh'd above Ground. In the laſt great Froſt I began to deſpair of two very large *Plants*, which ſtood abroad, and were even cut down to the Ground, without Hope of Recovery; but the *May* following, from the Fibres only which remain'd, there ſprung up above Fifty ſmall *Plants* from each Root.

The Flower of the Tulip Tree. Tab: III.^{d}

Fig I




Edging
Line for the Lowest flowers
Line for middle blowing flowers
Line for Greens and the tallest flowers
Line for middle blowing flowers
Line for the Lowest flowers
Edging
C
B
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B
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Fig II

A Bed Divided into five parts to be planted after The maner directed in the Last Chapter of this part.

A Scale of Feet

SECT. XIII.

Of the SENNA.

THERE are ſeveral Kinds of *Senna*, diſtinguiſh'd by various Names among the Gardeners, but there are only two Sorts of them which are commonly known, and made uſe of, *viz.* the *Scopion Senna*, the *Bladder Senna*; the firſt is, in my Opinion the moſt beautiful and deſerving of our Care, the *Bloſſoms* ſhewing themſelves as well in Autumn as in the Spring Seaſon; they both make pretty *Shrubs* for Wilderneſs Works, and may be propagated for that Uſe, either by ſowing the *Seeds* towards the latter End of *March*, or by *Laying* down the tender Twigs in the Earth in *April* or *May*, which ſoon ſtrike *Root*, and may be tranſplanted without Difficulty. They love a *Loamy Earth*, and grow well in the *Shade*.

SECT. XIV.

Of the TULIP-TREE.

I Have already ſaid ſomething of this *Tree* at the Beginning of this Chapter, eſpecially concerning that now growing at my Lord *Peterborough*'s. It is a *Plant* of the Wood, and will not proſper Abroad in a more open Expoſure, which I repeat, becauſe it is ſeldom that our Gardeners regard that Nicety in the Culture of *New Plants*. The *Tulip Tree* ſhould be ſet among ſuch ſuch *Trees* as are deſign'd for Groves, it will riſe to as great Height as any of our Timber-*Trees*. Its *Leaves* are ſomewhat like thoſe of the *Maple*, and its Flowers, which begin to open in *July*, are only found at the Extremities of the Branches. They have ſome ſmall Reſemblance of a *Tulip*, but not enough, I think, to give the Name to the *Tree*. The *Petals* are of a Yellow Colour, ſomewhat variegated with Vermilion; the Fruit, which ſucceeds them, is like the *Cones* of the *Fir-Tree*, but does not come to Perfection in *England*; however as we frequently receive good Seeds of it from *Virginia* and *Carolina*, I ſhall give my Reader an experienc'd Method of raiſing them, for it is very difficult to propagate them from Layers. The Ingenious Mr. *Adam Holt*, having receiv'd ſome of the *Cones* of the *Tulip Tree* from *Virginia*, ſow'd the Seeds of them in Pots about *Auguſt*, and ſet them under Shelter all the Winter, the Spring following they came up without the Help of a Hot-Bed. This time of ſowing the Seeds is neceſſary to be obſerv'd, for I have often try'd them in the Spring, but could not raiſe them at that Seaſon. The young *Plants* may be tranſplanted into ſingle Pots at two Years Growth, and muſt have Shelter in the Winter for the firſt nine Years at leaſt, 'till they have Strength enough to reſiſt the Severity of our Froſt; they may then be planted in the natural Ground, as I have directed, but rather in a ſandy Soil than any other.

SECT. XV.

Of the POMGRENATE.

WE know two Sorts of this *Plant*, *viz.* That with the ſingle Flower, and the Double Bloſſom Kind; they are both hardy enough to withſtand the Severities of our Winters, and are propagated by laying down the young Shoots in *March*. The Bloſſoms of each of them are of a moſt beautiful Scarlet Colour, the ſingle ones ſetting frequently for Fruit, and ſometimes ripening with us. I have ſeen ſome headed *Plants* of each Sort, but I rather adviſe them to be planted in Hedges or Wilderneſs Works; where they may be in leſs Danger of the *Knife* or *Sheers*. Some have made *Arbours* of them, which have been extreamly pleaſant. Theſe *Plants* love a light Soil, and may be tranſplanted either in the Spring or Autumn Seaſon.

SECT. XVI.

Of the ALTHEA-FRUTEX.

WE find two Sorts of this *Plant* (commonly) in the Gardens, differing from each other in the Colour of their Flowers, the one White, and the other Purple; they may be propagated from Layers in *September*, or Suckers taken from about the Roots at that time, and likewiſe from the Seeds ſown in *March*, and are uſed chiefly in Wilderneſs Works. The Bloſſoms appear in *Auguſt* in great Numbers, and afford a delightful Proſpect; they will grow in any Soil with little Trouble to the Gardener.

SECT. XVII.

Of the Double-bloſſom'd Virgin's-bower, *the* Maxechitl *or* Scarlet Jaſmine, Perwinkle, *and* French Willow.

THE firſt of theſe, *i. e.* the *Virgin's-bower*, may be raiſed from Layers in *September*, and ſome ſay from Cuttings likewiſe; the Flowers are of a Violet Colour, and appear in great Numbers, almoſt covering the *Plant*; it loves a light Soil, and as it is of a twining Nature, muſt be ſupported with Stakes. It may either be planted againſt a Wall, or ſet among the other flowering Inhabitants of the Wilderneſs.

THE *Maxechitl*, or *Scarlet Jaſmine*, is by ſome Gardeners call'd the *Trumpet Flower*; it is alſo a twining *Plant* like the former, and may be raiſed either from *Layers* or *Cuttings* in *September*; the *Flowers*, which it produces in Abundance about *May* or *June*, are rather of an *Orange* Colour than a *Scarlet*; it is commonly planted againſt Walls, tho' I am apt to believe it might maintain it ſelf in Wilderneſs Works, or more open Places. This alſo loves a light *Soil*, and frequent Waterings in the Summer Seaſon.

THERE are ſeveral ſorts of *Perwincle* cultivated by the Gardeners; it is a creeping *Plant*, eaſily ſtriking *Root*, if it be laid in the Earth about *March*, or will grow of *Cuttings* planted in *September*. Its pretty *Blue Flowers* makes an agreeable Show in the Summer; this *Plant* indeed hardly deſerves the Name of a *Shrub*, but as it is not ſtrictly of the *Herbaceous Race*, I take the Liberty to ſpeak of it in this Chapter, and becauſe, when it is ty'd up to Stakes, it may very well be reckon'd a fit Companion for *Flowering Shrubs*; this, with the reſt, may be planted in *Wilderneſs Works*, and in *Pots* (for the Ornament of *Parterres*) to prevent the too great Increaſe of its *Suckers*, which would be apt to over-run the Borders. It delights in moiſt Ground and Shade.

THE *French Willow* is alſo one of the Dwarfs of this Chapter, and is rather a greater Increaſer than the former, producing incredible Numbers of *Suckers* about the *Root*, which may be taken off and tranſplanted, either in the *Spring* or *Autumn* Seaſons; if we plant it in *Wilderneſs Works*, it will ſoon over-ſpread the Ground, but if it be deſired in the *Parterre* for the ſake of its pretty Pink-colour *Flowers*, the *Roots* muſt be confin'd in *Pots*.

THUS I think I have mentioned every ſort of *Flowering Shurb* and *Tree* known to the Gardeners, and have given ſuch Directions for their *Culture* and Management in Gardens, as I have my ſelf experienced. I might indeed have added to them the *Berberry* and *Almond*, which produce ſuch agreeable *Flowers*; but as thoſe *Trees* are chiefly celebrated for the *Fruits* they bear, ſo I ſhall not take any further Notice of them 'till I ſpeak of *Fruits* in general. I ſhall conclude this Chapter with taking Notice once more that every one of the *Flowering Shrubs* I have mentioned. may be cultivated in *Garden-Pots*, and ſo placed from time to time, as they *bloſſom*, in the Borders; by which Method a Gardener may change the Face of his *Parterre* every Week, and ſupply it conſtantly with freſh Beauties.

CHAP.

CHAP. IV.

Of PERENNIAL FLOWERS, *the talleſt Blowers.*

I Intend in this Chapter to ſpeak of ſuch *Flowers* as remain for many Years in the Ground, *Growing*, *Bloſſoming*, and *Increaſing*; and as they are moſt of them ſuch as will riſe to a conſiderable Height, and therefore the moſt proper to be planted in the Middle of Borders, and chiefly in large Gardens. I ſhall ſet down, as near as I can remember, their ſeveral Heights, and recommend that they be planted in Places proportionable to their ſeveral Altitudes, that if it is poſſible, one may not find ſuch intollerable Miſtakes as are frequently committed in many Places, of planting Dwarfs in the midſt of a Border, and ſome of the moſt Gigantick Kinds of *Flowers* for *Edgings*; but that in the Planting a Border or Bed of *Flowers*, we may judiciouſly mix the ſeveral Sorts, ſo as to have not only ſome of them in *Bloſſom* every Month of the Year, but that they may be ſo diſpoſed as to appear gradually one above the other, and add Beauty to each other by their Variety of Colours; for which end I ſhall to add a Figure of a Bed of Earth four Foot wide, divided in the Manner I propoſe, and ſet down the proper *Flowers* allotted for each Diviſion of it, when I have mentioned the ſeveral Sorts, and their Culture.

SECT. I.

Of the HOLTHOCKS.

THIS *Plant,* as it is always rais'd from *Seeds,* ſo are the *Flowers* commonly different from each other. I have ſeen about ten ſeveral Sorts of them in one Garden, which if the Syſtem of the *Generation* of *Plants* be true, may happen from accidental Coupling of one with the other; their *Flowers* are commonly double, and ſo cannot perhaps be very eaſily impregnated with other *Farina* than their own, otherwiſe we might have had many more Varieties of them; however as they are, they neither want Beauty nor Stature, ſeldom bearing their Flower Stems leſs than ſix Foot high from the Ground, which are commonly garniſh'd with their Roſe-like *Bloſſoms* above half their Height. Their *Seeds* are ſown in *March* in the natural *Earth*; and tho' they do not lie long in the Ground before they come up, yet they produce no *Flowers* 'till the ſecond Year: They may be tranſplanted about *September* or *March*, and will begin to Flower in *July* or *Auguſt*; they require a rich Earth, and frequent Waterings in the Summer, to make them large. Theſe remain good ſeveral Years, and may, for their Duration as well as their Magnitude, take Place among the Flowering Shrubs in Wilderneſs Works, or be planted in Lines in Avenues of Trees, where Cattle cannot come to deſtroy them; ſometimes in the moſt remote or open Parts of large Gardens, where their *Red*, *White*, *Purple* or *Black* Flowers afford a beautiful Proſpect. They die to the Ground every Winter, and ſhoot out again the following Spring: They are alſo increas'd by parting their Roots in *March*, but the Plants propagated that way, are not ſo ſtrong to Flower as the Seedlings.

SECT. II.

Of the PERENNIAL SUN-FLOWER.

THIS *Plant* bloſſoms about the ſame time with the former, and will bear its *Flower Stems* near ſix Foot high, if it be encouraged with rich Earth, and well water'd in the Summer Months. The Yellow *Flowers* which it produces reſembling ſo many *Stars*, are very delightful, but are not ſo large as thoſe of the *Annual Kind*. It may be propagated from *Seed* ſown in *March*, or *Slips* of the *Root* taken off at that time, and tranſplanted. The Summer *Shoots* of this *Plant*, like thoſe of the former, always periſh at the Approach of Winter, and are ſucceeded by others in the following Spring. It will grow in the Shade and almoſt any Soil, and is even capable of reſiſting the Smoak of *London*; where it is often cultivated in Pots. It may be planted as a Companion with the *Hollyhock*.

SECT. III.

Of the ASTERS *or* STARWORTS.

THE curious Botaniſts reckon about twenty Sorts of *Starworts*, and I think I have ſeen the Figures of about fifteen different Kinds of them. Their ſeveral Names and Deſcriptions would be tedious to my Reader: And ſince they are all propagated after the ſame manner, the mentioning only of two Sorts, which I eſteem to be preferable to the reſt, may ſuffice for the Inſtruction of any Planter.

THAT Sort which is the talleſt of the Two which I ſhall recommend; is known to the Gardeners by the Name of the *October* Flower, it bears its *Purple* Flowers about *October*, upon *Stalks* of about four Foot from the Ground, and is not inferior in its Beauty to any Flower of the Spring. I cannot forbear taking Notice in this place, that the Flowers of the Autumn Seaſon are inclining to the darker Degrees of Colour; this and other *Aſters*, which blow late, produce *Purple Bloſſoms*, the *Saffron Crocus* has Purple Flowers, and the Autumn *Cyclamen* is tending to that Colour; *Stock July-Flowers*, which Bloſſom about the End of the Year, are all inclining to Purple; and the *Colchicums* likewiſe, which are Autumn-blowing Flowers, are ſtain'd with the ſame Colour. I think it would be well worth the Enquiry of the Curious, whether this Purple which reigns in the Autumn among Flowers, does not proceed from the Quality of the Earth at that time, whoſe pureſt Juices are then exhauſted. But to return to the Culture of this *Aſter* or *October-Flower*, it is ſo apt to increaſe in its Roots, that without it be confin'd in Pots, either as I have directed for the foregoing *Plants*, or as a moſt Curious and Learned Gentleman in the Art of Gardening, *Samuel Reynardſon*, Eſq; of *Hillingdon*, has been uſed to plant it (in Pots without Bottoms) it will quickly overrun the Ground; every *Slip* taken from the Root in *March* will grow in any Soil or Expoſure, and make a good Show that Year. It is a fit Companion for the talleſt Flowers.

THE *Italian Starwort* is the other Sort which I would recommend to the Gardener, it produces its Purple Flowers in *Auguſt* and *September* upon Stalks of about two Foot high, this may be managed like the former; but as it is of a lower Stature, ſhould be planted in leſſer Gardens, and ſmaller Works than the other.

SECT. IV.

Of the Everlaſting PEA.

THIS *Plant* is likewiſe *Perennial*, and may very well be placed among the talleſt *Plants*; it is raiſed from Seeds ſown in *March*, but does not Bloſſom 'till the ſecond Year after ſowing. The *Flowers* which are of a *Peach-bloom* Colour continue Blowing for above two Months. Doctor *Grew* tells us, that the Bloſſoms of this *Plant*, if they are ſteep'd ſome time in Spirits of Wine will produce a fine liquid *Blue* Colour, equal to that of *Ultra Marine*. The *Plant* will hardly bear Tranſplanting, without great Care to put it immediately in the Earth; the proper Seaſon for it is *March*, or as ſoon as the *Haulm* is wither'd. As it is *Carot-rooted* it delights in ſandy Soil, and ſhould be planted either near a Tree or ſome Hedge where it may have Support;

it will grow about eight Foot high, if it be tied to a Stake.

SECT. V.

Of the CAMPANULA PIRAMIDALIS *and* CANTERBURY BELLS.

OF the *Campanula Piramidalis* there are two Sorts, one bearing *Blue*, the other *White* Flowers, upon Stalks which are ſometimes near ſix Foot high. Both theſe Kinds have been chiefly cultivated in Pots for the adorning of Chimneys in the Summer Months, but they will grow very well in the natural Ground, if the Slips about the Roots are parted in *March*. They delight in ſandy Soil, and are very proper Ornaments for the middle Row of Flowers in large Borders; they Bloſſom in *July* and *Auguſt*.

THE *Canterbury-Bells* have Bloſſoms of a deeper Blue than thoſe of the *Campanula Piramidalis*; the Flower-ſtems are commonly about three Foot high, ſo that this *Plant* is proper for the Middle of Borders in large Gardens; it is raiſed from Seeds ſown in *March*, but does not Bloſſom till the ſecond Year after Sowing; the Time of removing the ſeedling *Plants* is either in *Auguſt*, or the *March* after they are come up.

SECT. VI.

Of the PRIMROSE-TREE.

THE *Primroſe-Tree*, ſo call'd by the Gardeners becauſe the Bloſſoms are ſomewhat like thoſe of the common *Primroſe* in Smell, Shape, and Colour; the Flower-ſtems will ſometimes riſe near three Foot high, and produces Flowers in *June*, the Seed is ripe about *Auguſt*, and muſt be ſown in the Natural Ground in *March*, towards the latter End of the Month. The ſeedling *Plants* will not Bloſſom 'till the ſecond Year, therefore ſhould be ſown in a Nurſery, and the young *Plants* removed to proper Places the *Auguſt* after they are come up. This *Plant* alſo is proper for the Middle of Borders in large Gardens, and will grow in any Soil.

SECT. VII.

Of the LILYS *and* MARTAGONS.

ALTHO' the *Lilly* and *Martagon* are properly bulbous rooted *Plants*, yet for their Extraordinary Stature above all other Bulbs that I know, I ſhall place 'em among the Giants of this Chapter; and beſides, as their Roots flouriſh the better for remaining conſtantly in the Ground, I think they may well enough take place among the *Plants* I am now deſcribing. The *Lillys* are what I ſhall firſt examine, of which there are many Kinds, *viz.* the *Common White Lilly*, the *Double-Bloſſom'd White Lilly*, the *Strip'd Lilly*, the *Orange Lilly*, and that Kind which produces *Bulbs* upon its Flower Stalks. Theſe *Lillys* are all of them propagated after the ſame manner, by parting their *Roots* when the *Leaves* are vacant about *July* or in *Auguſt*; they all of them blow about the ſame time, in *May* and *June*, upon Flower Stems of three Foot high, or thereabouts, and equally delight in open *ſandy Soil*; they are very proper *Plants* for the Middle of Borders in great Gardens, or to be planted under Hedges in long Walks, except the *ſtrip'd White Lilly*, which is yet Rariety enough to deſerve a Place in the niceſt, and even the ſmalleſt Garden: But of theſe ſeparately.

FIRST, the *White Lillys*, whether with ſingle or double Flowers, have no other Difference than in the Make of their Bloſſoms; that with *ſingle Flowers* is in my Opinion preferable to the other which is call'd the *Double Bloſſom*; the *firſt* has large perfect *Flowers* in good Quantities, and the *other* miſ-ſhapen *Bloſſoms* without any other Deſert than their Novelty. What is call'd the *ſtrip'd White Lilly*, differs only from the Common Sort with ſingle

Bloſſoms, in having its *Leaves* curiouſly *Edged* with a *Cream Colour*; it is ſo beautiful in the Winter, that few of the gayeſt *Plants* exceed it.

THE *Orange-Lilly*, ſo call'd from the Colour of its Flowers, is very Ornamental in Gardens, and a very proper Companion for the *White Lilly*, and makes an agreeable Mixture with it; and the other, which bears its *Bulbs* on the Flower-ſtalks, is very deſirable for its beautiful Red Flowers, as well as for its ſingular way of producing its Increaſe. It would be well worth our Enquiry, from whence theſe *Bulbs* have their riſe, whether they do not proceed from *Female Bloſſoms* impregnated by the *farina* of the *Flowers*; I own it is a Caſe which I have not yet duly conſider'd, but I hope I ſhall be able to give a better Account of it, when I have examin'd it more ſtrictly; and I could wiſh every curious Reader would communicate his Obſervations upon Caſes of this kind, directed for me at Mr. *Mear's* the Publiſher of theſe Papers, that by a mutual Correſpondence of Curious Men, many Myſteries in Planting might perhaps be diſcover'd and brought to light for the Profit and Pleaſure of Mankind, which is the chief End I aim at in theſe Papers.

THE *Martagons*, called by ſome Gardeners *Turks Turbants*, or *Curl'd Lillies*, differ from the *Lillies* I have already mentioned in the Frame and Order of their *Flowers*; the *Bloſſoms* of the *Martagons* hang downward, and have their *Petals* or *Flower-leaves* curl'd or turn'd up, which the *Lillies* have not; but the *Roots*, *Flower-ſtems* and *Leaves* are not unlike thoſe of the *Lilly*; and in reſpect to their Culture are ordered in the ſame Manner, and love a light ſandy *Soil*. They moſt of them blow about two Foot high, except the *Virginian Martagon*, which is commonly three Foot in its Flower-ſtem; their *Flowers* are of ſeveral Colours, ſome *Yellow*, others *Scarlet* and variouſly ſpotted, but the *Virginian* Kind far exceeds all the others for its beautiful *Flowers*, and is found but in few Places. They are all of them proper for *Parterres*.

SECT. VIII.

Of the FOXGLOVE.

THE curious Gardeners cultivate three ſorts of *Foxgloves*; the firſt or talleſt ſort they call *Iron*-colour'd *Foxglove*, the other two are diſtinguiſh'd likewiſe by the Colours of their *Flowers*, *viz.* the *Purple* and the *White*; they are all of them rais'd from *Seeds* ſown in *March*, but do not *Bloſſom* 'till the ſecond Year after *ſowing*, the *Flowers* commonly appear in *May* and *June*. The firſt blows about four or five Foot high, the other two about three Foot. Theſe *Plants* delight in the Shade, and thrive well in a Loamy *Soil*.

SECT. IX.

Of MULLEINS *and* MOTH-MULLEINS.

THESE Kinds of *Plants* are very rampant, and therefore very proper Companions for the others of this Chapter, few of them *Bloſſoming* lower than four Foot, but ſome ſix Foot high, they are all raiſed from *Seeds* ſown in *Autumn*; or if Conveniency will not permit at that time, *March* will ſerve; they delight in ſandy Soil, and ſhady Places; and altho' they are moſt of them wild *Plants*, yet the beautiful Spikes of *Flowers* which they produce in the Summer, renders them worthy our Regard. There are many Kinds of them bearing *Flowers* of different Colours, ſome *White*, others *Yellow*, *Red*, *Brown*, *Purple*, *Black* and *Green*, ſo that I ſee no reaſon why they ſhould not be cultivated among other tall *Plants* in large Gardens. They *Bloſſom* the ſecond Year after *Sowing*.

SECT.

SECT. X.

Of the ACANTHUS.

THIS *Plant* is very rarely found in the Gardens about *London*, and I do not remember to have ſeen it in above four Gardens in *England*, notwithſtanding its Curioſity and eaſie Culture. The *Flowers* appear in *June* upon Stalks of above two Foot high, they are ſhaped like the *Bloſſoms* of the *Foxglove*, and are of a *Peach-bloom* Colour; the Leaves of the *Plant* alſo are not without their Beauties, full of Thorns as any *Thiſtle*, and prettily variegated. The *Seeds* muſt be ſown in *March*, but will not *Bloſſom* nntil the 2d or 3d Year; they love a ſandy *Soil*, and Shade.

SECT. XI.

Of the WHITE HELLEBORE.

THERE are two Kinds of the *White Hellebore*, one with *Rediſh Black Flowers*, and the other with *Greeniſh Flowers*; the firſt *bloſſoms* in *May*, and the other the following Month; the *Leaves*, *Roots* and *Stature* of both Kinds, are much alike; both having curl'd plated *Leaves*, and *bloſſoming* about four Foot high. The Leaves are of themſelves a pretty Ornament, and the large Spikes of their *Flowers* are ſurprizingly beautiful for their odd Colours; they both die to the *Root* in *Winter*, and are propagated from Off-ſetts parted in *March*, and planted in a rich light *Soil*. Theſe *Plants* are proper for large Gardens, and with them I ſhall conclude this Chapter, and proceed to treat of ſuch *Flowers* as are leſs rampant, and take up leſs room in Gardens.

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CHAP. V.

Of Middle-ſiz'd Perennial Flowers.

IN this Chapter I ſhall mention ſuch *Perennial Flowers* as are of middle Stature, and leſs Rampant than the former, and conſequently are proper Inhabitants for ſmaller Gardens; the firſt I ſhall treat of is the *Valerian*, and its Kinds.

SECT. I.

Of the VALERIAN.

THERE are three *Plants* known to the Gardeners by the Name of *Valerian*, and diſtinguiſh'd from one another as follows, *Dodineus*'s or *Red Valerian*, *Garden* or *White Valerian*, and the *Greek Valerian*; all theſe *bloſſom* about the ſame time of the Year, in *May* and *June*, and may be raiſed from *Seeds* ſown in *March*. The firſt, *i. e.* the *Red Valerian*, is of leſs Duration than the other two, it *bloſſoms* about two Foot high, bearing great Quantities of ſmall *Red Flowers*: I have not try'd whether it is increas'd by parting the *Roots*, but have propagated many *Plants* of the other Kinds that way in *March*. The *Garden Valerian* bloſſoms about the Height of the former, bearing Tufts of *White Flowers*, and has this Quality which is found in the firſt, that the *Root* when it is broken, yields an agreeable Odour. The third Sort, or *Greek Valerian*, bloſſoms about a Foot high, bearing pale *Blue Flowers* in Bunches on the Top of its Flower Stems. This is a fiberous-rooted *Plant*, very eaſily encreas'd by Slips. I have ſeen this ſort with variegated Leaves common enough in ſeveral Gardens.

SECT. II.

Of the Perennial Cyanus, *or* Blue-bottle.

THIS *Plant* is either raiſed from *Seeds*, or propagated from *Slips* taken from the *Root* in *March*; the *Flowers* are admired chiefly for their fair *Blue* Colour, which is the moſt rare of any other in the Flowers of *Plants*; the Flower-Stalks are commonly about two Foot high, *bloſſoming*

ing in *May* and *June*; and frequently in *Autumn*; this *Plant* loves a light natural *Soil*, and an open Expoſure.

SECT. III.

Of the MONKS-HOOD, *or Blue* HELMET-FLOWER.

THIS *Flower* is very common in the Gardens remote from *London*, but in thoſe near the City it is rarely found; the *Flowers* are of a deep *Blue*, and of a ſurprizing Make; they appear upon Stalks of about two Foot high in *May* and *June*, and are ſo poiſonous, that I have heard the eating only 6 or 7 of the *Bloſſoms* in a Salad, has kill'd a Gentleman in *France*, who was not appriſed of their evil Quality; it is ſaid that where they grow wild, no Cattle will touch them; and that the ſort of Inſect natural to this *Plant*, is an Antidote againſt the Biting of all venomous Creatures; we may propagate this *Flower* by parting the *Roots* in *March*. It Delights in a Loamy *Soil*, and Shade.

SECT. IV.

Of the ROSE-CAMPION.

THERE are three ſorts of *Roſe-Campion* cultivated in our Gardens, the *Red* and *White-flowering* Kinds, and the

Red Double-Bloſſom, they all of them blow about a Foot and half high in *June* and *July*; the firſt two ſorts are raiſed from Seeds ſown in *March*, or from *Slips* taken from the Root at that time; and the Double-Bloſſom Kind, which produces no Seed, is only propagated by *Slips* in the ſame Month; this laſt is a deſirable *Plant* for the Extraordinary Colour of its Flowers, which is the moſt dazling Red I had ever ſeen. A Loamy Soil and open Expoſure is the moſt proper for them.

SECT. V.

Of the Double-flower'd ROCKET.

THE Gardeners know two ſorts of *Double Rockets*, the *White Flowering* ſort, and that with the *Fleſh-Colour* Flowers; they both blow in *May* upon Stalks of about a Foot and half high; the *White Flowering* Kind is more eſteem'd than the other, and more commonly found in Gardens, theſe are propagated from *Slips* taken from about the Root, and planted in *March* in Loamy Soil, they delight in an open Expoſure.

SECT. VI.

Of BACHELORS-BUTTONS.

THE Flower call'd by the Gardeners the *Bachelors-Buttons*, is of two Kinds, I mean only ſuch as are cultivated in Gardens, for there are other ſorts of them which grow wild, and bear only ragged ſingle Flowers, and are not thought worthy our Care. Theſe double Flowering Kind are only different from each other in the Colour of their Flowers, the one Red and the other White; the firſt is common enough in moſt Gardens, but the White is more rarely found; they produce their Bloſſoms in *June* and *July*, upon Stalks of two Foot high. Theſe *Plants* love Shade and a Loamy Soil, and are propagated by parting the Roots in *March*.

SECT. VII.

Of the SCARLET-LYCHNIS.

THE *Scarlet-Lychnis* is a *Plant* ſo beautiful, that it cannot well be wanting in our Gardens; the *Single-flowering* ſort, as well as the *Double Kind*, are both very delightful to the Eye, they bear their *Truſſes* of *Scarlet Flowers* upon Stalks ſomewhat more than two Foot high in *June* and *July*, and are ſo much eſteem'd, eſpecially the *double Sort,* that Gardeners uſually cultivate them in Pots for the niceſt Quarters of their Gardens, or to ſet in Chimnies in the Summer; this *double Kind* is increas'd by ſlipping the Root in *March,* and that with the *ſingle Flower* may be propagated after the ſame Manner, or raiſed in that Month from Seeds, which I think bloſſom the firſt Year: They love an open Expoſure, and a light natural Soil.

SECT. VIII.

Of the SWEET-WILLIAM.

OF this Plant there are two ſorts with *ſingle* Flowers, and a *double* Kind, commonly cultivated in Gardens; the *ſingle* ones differ only in the Colour of their Flowers, the one has *Truſſes* of Bloſſoms variegated with Red and White; and the other, Cluſters of Flowers of a deep Crimſon Colour. Theſe two bear their Bloſſoms in *June* and *July,* upon Stalks of two Foot high; and the *double flowering* Kind produces its beautiful red Flowers in the ſame Months upon ſhorter Stems. The firſt two Kinds, *viz.* thoſe with the *ſingle* Flowers, may be rais'd from Seeds ſown in *March,* and will bloſſom the ſecond Year; but the *double Sort* is only propagated from Slips taken near the Root about *March* or *April,* and planted in a

Loamy Earth, which they delight in. The others may be alſo encreas'd after the ſame manner, or may be laid down in the Earth like *Carnation* Layers.

SECT. IX.

Of the CARNATION *or* JULY-FLOWER, *Vulg.* GILLYFLOWER, *and* PINKS, *their ſeveral Kinds.*

THIS admirable Flower is of all others the moſt delightful, as well for the agreeable Scent as for its beautiful Colours; the Varieties of it are hardly to be number'd, every Year producing new ſorts of it from Seeds. The Gardeners divide it into Five Claſſes, which they diſtinguiſh by the Names of *Picketees, painted Ladies, Beazarts, Flakes* and *Flames*: The Flowers of the *Picketees* are always of a white Ground *ſpotted,* or *pounced* (as they call it) with *Red* or *Purple*: The *painted Ladies* have their *Petals* tinged, on the upper ſide, either with *Red* or *Purple,* and the under ſide of their Flower-leaves is plain White; the Flowers of the *Beazarts* are ſtrip'd, or variegated with four diſtinct Colours; the *Flakes* are of two Colours only, and thoſe always ſtrip'd; and the *Flames* have a red Ground always ſtrip'd with black or very dark Colours. Each of theſe *Tribes* is very numerous, but the *Picketees* chiefly, ly; of which I have ſeen above one Hundred different ſorts in one Garden; every one diſtinguiſh'd by the *Name* or *Title* of ſome Perſon of *Note* or *Quality*. The *Floriſts* likewiſe mark the Properties of theſe Flowers by the Shape of their *Flower Pods*; that Race of them which blow without burſting, are call'd *long podded* Flowers; and the other, whoſe *Petals* cannot contain themſelves within the Bounds of the *Chalyx*, are call'd *round podded* Flowers. I have meaſur'd the Bloſſoms of ſome of the laſt Kinds above four Inches over, but have heard of ſome that were larger. Theſe Flowers are not of any certain Height, ſome of them blowing near four Foot, and others not two Foot high, and the Times of their Flowering is alſo as uncertain as their Stature, ſome of them beginning their Bloſſoms in *June*, others not till near *Auguſt*; but this happens from the different Seaſons of ſowing the Seed; thoſe which are put into the Ground about *March* will blow ſooner than thoſe ſown in *May*; altho' they do not bloſſom till the ſecond Year; however, the Height of their *Bloom* is about the Middle of *June*, as it is then the *Floriſts* have their grand Aſſembly, to ſhew their Varieties and name their new Curioſities. Theſe Flowers are propagated either from Seeds or Layers, and as they are ſo particularly admir'd, by all

Lovers of a Garden, I ſhall be the more exact in the Method of their Culture: Firſt then, to begin with their *Seeds* and Manner of ſowing them; my Reader may remember that in the ſecond Chapter of my firſt Part, concerning the Generation of Plants, I have endeavour'd to explain how the *Duſt* of one Flower will impregnate and enliven the *Seeds* of another; and that from that accidental Coupling, the Seeds are ſo chang'd as to produce Plants with Bloſſoms varying from thoſe of the Mother-Plant. I have likewiſe ſhewn why double Flowers ſeldom bear *Seed*, which I conjecture is becauſe the *Male Parts* in them are either not perfect, or elſe are confin'd from Action by the Multiplicity of the *Petals*. This Conſideration leads me to adviſe the Curious Floriſts to plant of every good ſort of his double Carnations in Beds on a Line in the Middle, and on each Side of them to ſet at leaſt two Rows of ſingle ones of choice Colours, and among them ſome Plants of *Sweet-William*, and of the *China* or *Indian Pinks*, which have ſuch Varieties of odd Colours in them, as I ſhall mention hereafter. The *China Pinks* and the *Sweet-Williams*, bearing ſingle Flowers, as well as the ſingle Carnations, may have Opportunities of communicating their *Farina* into the Cells of the double ones, and ſet their Seeds, which if they do, we ſhall not only gather a larger Quantity than we could otherwiſe expect, but likewiſe be aſſur'd of great Varieties from them. If we have good Fortune enough to find the *Seed-Veſſels* begin to ſwell, we muſt guard them carefully againſt two Evils, *Earwigs* and *Wet*; the firſt may be deſtroy'd by hanging Hoggs-Hoofs, the Bowls of Tobacco-Pipes, or Lobſters-Claws, on the Tops of the Sticks which ſupport the Flowers, and killing the Vermin, which will lodge in them, every Morning. And to preſerve the ſwelling *Fruit* from rotting by too much *Wet*, ſhelter the Flowers with little Baſons or Trenchers, which will likewiſe ſerve to keep off the too great Heat of the Sun, which would hinder their Growth. With this Care you may expect to find the *Seeds* ready to gather towards the latter end of *September*; this Work muſt be done when the Weather is dry, if poſſible, leaſt after all our Pains they grow mouldy and decay. Gather the Seeds with the Stalks they grow upon, and let them remain in that State expos'd to the Sun through a Glaſs for a Month or two, without opening any of the *Husks* or *Seed-Veſſels* till the Time they are to be ſown, which according to my Opinion is beſt done in *April* in the following Compoſt.

TAKE two Load of Sandy Loam (as the Gardeners call it) or of my Medium Soil, to which add one Load of well conſumed Melon Earth; ſift theſe well together, and let your Heap lie for a time to mellow, then ſift it a ſecond time, either to ſow the Carnation Seeds in, or to plant your *Layers* or *Roots* of them upon. Having fill'd your Pots with this Earth and ſmooth'd it on the top, ſprinkle on your *Seeds*, and covering them half an Inch with the ſame Compoſt, preſs it gently with a Board, and let them ſtand expoſed to the Weather, the Seed will be up in about three Weeks and the young *Plants* big enough to tranſplant into Beds the *July* following, they muſt be ſet about ten Inches diſtant from one another, and ſhaded from the Sun with Matts for about three Weeks, uncovering them every Evening for the Benefit of the refreſhing Dews. The ſecond Year after ſowing you may expect many Varieties from the ſeedling Plants, and 'tis in this, the great Pleaſure of Gardening conſiſts. Whatever Rarities you find in this Nurſery, muſt be *laid* down ſo ſoon as poſſible, by cutting half thro' a *Joynt*, and ſplitting the *Internode* upwards half way to the other *Joynt* above it; then muſt the wounded part be buried in the Earth, and faſten'd down with a Hook of Wood, till it ſtrikes Root, and can ſhift for itſelf, which will be in two Months time, if the Earth be light. But as the time of laying down the *Layers* of the Seedlings is uncertain, in that we cannot know which are deſerving of that Trouble, therefore I ſhall take notice, that the moſt proper Seaſon for this Work, is in *July*, ſo ſoon as the *Layers* are big enough for that Operation, that they may get *Roots* betimes to be taken from their Stocks, and tranſplanted early in the Autumn, where they are to remain all Winter. Tho' ſome rather chuſe to leave them on the Old Roots till *March*, before they tranſplant them: but that I cannot approve of, becauſe I have Experienc'd, that the Removal of theſe *Flowers* in the Spring, often endangers them, and makes them blow late and weak; whereas, on the contrary, if when we take of the *Layers* in Autumn, we then *Plant* them either in the Pots or Borders where they are to blow, we are certain of their Bloſſoming ſomewhat earlier, and much ſtronger, and beſides, their *Increaſe* or *Layers*, will be in a fit Condition to lay down betimes. However, whether we *Plant* out theſe *Flowers* in Autumn or in the Spring, it will be neceſſary to acquaint the Planter that they ſhould be ſhaded or defended from the Sun for a Fortnight after planting, and during the Winter ſhould always be nigh ſome place of Shelter in caſe of ſevere Froſts. It remains now for me to ſay ſomething of the *Blowing* of a *Flower* as it is practiſed by the moſt Ingenious *Floriſts*; about *April*, when the Flower-Stems begin to put forth, (or *Spindle*, as the Gardeners term it) we muſt place by each Flower a ſtraight Stick of about four Foot long, and tie the *Spindles* to it as they ſhoot. So ſoon as the *Flower-buds* appear, leave only one of the largeſt upon each Flower-ſtem to *bloſſom*, about ten Days before the *Flowers* open themſelves, the *round podded* Kinds will begin to crack their Husks on one ſide, then muſt the careful Gardener with a fine Needle ſplit or open the Husk on the oppoſite ſide to the Natural Fraction, and about three or four Days before the compleat opening of the Flower, muſt cut off with a pair of ſharp Scizzars, the Points on the Top of the Flower-Pod, and ſupply the Vacancies, or the Openings on each ſide of the Husk with two ſmall Pieces of Velom, or Oil-cloth, which he may eaſily ſlip in between the *Flower-Leaves*, and the Inſide of the *Husk*, ſo will the *Bloſſom* diſplay its Parts equally on all Sides, and be of a regular Figure; but beſides this Care, it is a common Practice, and with very good Reaſon, when the *Bloſſom* begins to ſhew its Colours, to ſhade it from the extream Heat of the Sun, either with a Trencher-like Board, or ſome other Device of the like Nature faſten'd to the Stick that ſupports it; *for Flowers as well as Fruits grow larger in the Shade, and ripen and decay ſooneſt in the Sun.* Thus I have done my beſt Endeavour to inform the Curious Gardener of the moſt proper Method for Increaſing and Improving of this Flower; but am obliged, before I conclude this Section, to mention the ſeveral ſorts of *Pinks* proper for Gardens, which are of the ſame Family with the *Carnation.*

THE *Pinks* moſt commonly cultivated in Gardens are the *Red Double-Pink,* the *White Double-Pink,* the *Double-Pheaſant Eye-Pink,* the *Dwarf Double-Mountain-Pink,* and the *China-Pink*; beſides the common ſingle ones rais'd from Seed ſown in *Drills* or *Lines* about *March.* The firſt Three of theſe blow about a Foot and half high, and altho' they have been frequently uſed for Edgings in Gardens, yet I ſhall take the Freedom to direct them rather for the Inſide of Borders, where they ſhould be planted in Spots, they are too apt to grow irregular in Edgings. The *Dwarf Mountain-Pink* indeed, as it is a ſlow Grower, and is ſeldom above eight Inches high, may well enough be placed on the out-ſides of Garden-beds;

but that ſort is now rarely found. Theſe four Kinds of *Pinks* are all raiſed from *Slips* planted in *Auguſt*, or very early in the Spring. The *China-Pink* is admirable for its ſtrange Variety of odd Colours, and its ſurprizing Variegations in the Middle of its *Flowers*; this Sort is yet a Novelty with us, and to be met with only in ſome curious Gardens; it is rais'd from Seeds ſown in *March*, and *bloſſoms* the firſt Year about a Foot high, and will reſiſt the Froſts of our Climate, if the Flower-ſtems are cut down as ſoon as the *Bloſſom* is over.

SECT. X.

Of the WALL-FLOWERS.

I Have ſeen five Sorts of *Wall-Flowers* cultivated by the Gardeners, which are very well deſerving Place among the moſt delightful Flowers for their pleaſant Odour and laſting Bloſſoms; the moſt common ſort of them is that with the *Double Yellow Flower*, and the more rare Kinds are the *Double Yellow* with variegated *Leaves*, the *Double White*, the *Bloody Wall-Flower*, whoſe Flowers are Yellow tinged with red, and a new ſort with *large ſingle Flowers* variegated with Yellow and Brown; all which Bloſſom about the ſame Seaſon of the Year, and about two Foot high from the Ground, and may be raiſed from *Slips* planted in ſhady Places, either in *March*, *April*, *May* or *June*: But the laſt ſort may be more eaſily propagated from Seeds ſown in *March*. The Seed-Veſſels of this and other ſingle Kinds of it, as well as their Flowers, are ſo like thoſe of the *Stock July-Flowers*, that I am of Opinion they might be made to impregnate each other's Seeds if they were planted nigh enough together, and from ſuch Coupling, perhaps, might be produced a *Stock July-Flower* with Yellow Bloſſoms. It is what I deſign to try, my ſelf, as well as many other Couplings of the like Nature; and altho' the Seed of ſuch a neutral *Plant* would not be made to grow, the Species may be continued and increas'd by planting *Slips* or *Cuttings* of it, as is common in the Culture of *Double-Stocks*. Theſe *Wall-Flowers* delight in ſandy Soil, or to grow among Rubbiſh.

SECT. XI.

Of STOCK JULY-FLOWERS, *Vulg.* GILLY-FLOWERS.

THERE are *Shrubs* like the former, commonly about two Foot high, ſome ſorts of them bloſſoming almoſt all the Year. The ſingle Kinds of them are all rais'd from Seeds ſown in *March*, and will come up, and be fit to tranſplant the

Autumn following, but do rarely blow till the ſecond Year, unleſs they be raiſed in Hot Beds, or are of the Annual kind, as they call it. Among the Seedlings, we often find *Plants* with double Flowers, which ſhould be carefully tranſplanted into Pots for the Ornament of the niceſt Places in the Garden, or to adorn Chimneys in the Summer. The double Kinds may be increas'd by *Slips* or *Cuttings*, planted in *May*, *June* or *July*; but it is not worth while to propagate the ſingle ones, after any other manner, than from their Seeds. There are five ſorts of them, beſides the *Dwarf* kind, or *Annual-Stock* for Edgings. The *White Flowering kind*, that with the *Purple-Flower*, the *ſtrip'd* ſort, the large *Red Brompton Stock*, and that Sort which Bloſſoms the firſt Year; of all which the *Brompton* kind is eſteem'd to be the beſt: The Scent of their Flowers is very grateful, and the ſeveral Colours of their Bloſſoms, if they are well mixt, are extreamly Beautiful. They love a light Natural dry Soil, and are apt to periſh by too much wet in the Winter, therefore it is adviſable to ſow a Young Nurſery of them about *Auguſt* to blow early the next Year, if the great *Plants* drop off as they did every where in the ſevere Froſt of the laſt Year.

I cannot any where, ſo properly as in this Place, take Notice of an Obſervation which an Ingenious Gentleman has communicated to me concerning the Seeds of *Plants*, and particularly of thoſe of the *Stock July-Flower*; he ſays that he once bought ſome *Stock-Seed* of a Gardener near *London*, which he ſow'd in his Garden in *Oxfordſhire*, and brought him great ſtore of double Flowers, and ſome few ſingle ones of an extraordinary Colour and Bigneſs, which were ſo much admired by the Gardeners round about him, that he was continually ſollicited for ſome of the Seed. He ſaved a large Quantity, and ſupply'd ſeveral curious Perſons with it. What he gave away maintain'd for the firſt time of ſowing, its firſt Excellence, but what he ſow'd in his own Garden loſt its good Qualities. In ſhort, he was now become a Supplicant to thoſe he had ſet up, and from the Seeds they had ſaved, he had the Pleaſure of raiſing many *Double-Flowers*, while thoſe who had ſaved the Seeds, complain'd of their ill Luck, and were apt to ſay, that if they had not gather'd them with their own Hands, they ſhould have believed they had been impoſed upon; at laſt, they all agreed mutually to Exchange the Seeds of this and other Flowers annually, and every one had good Succeſs. This Story, I think, plainly ſhews how much the Change of Air and Soil contributes to improve ſome particular *Vegetables*.

THE Annual Stock for Edgings will be more properly introduced in the Chapter relating to other Annuals.

SECT. XII.

Of the French *HONY-SUCKLE*.

THIS *Plant* bears Spikes of *Purple-Flowers*, much like thoſe of the *Lupines* in their Figure and Manner of Growth; it Bloſſoms above a Foot high, and makes an agreeable Show. It is raiſed from Seeds ſown in *March* or *April*, in the Natural Ground, which ſhould be light, and lie expoſed to the *Sun*; the ſeedling *Plants* will not Bloſſom till the ſecond Year, and ſometimes not till the third, eſpecially if the Ground be overmoiſt. 'Tis a hardy *Plant*, and will live ſeveral Years.

SECT. XIII.

Of the FLOS-CARDINALIS.

I Have ſeen and Cultivated only two ſorts of the *Cardinal Flower* in *England*; the one blows almoſt three Foot high, with ſlender Stalks, and moſt Beautiful Flowers of a ruby Colour; the other bloſſons about two Foot high, and bears pale *Blue*

Blue-Flowers; the Seeds of both theſe kinds are brought from *Carolina*, and I think from *Virginea* likewiſe; they muſt be ſown in Hot-Beds about *March* in ſifted light Earth, the Seeds are ſo ſmall that they muſt be but thinly cover'd with Mold, otherwiſe they will not come up, and the ſame Rule muſt be obſerv'd in the ſowing all manner of Seeds, to cover them with Earth in Proportion to their Bigneſs. Theſe *Plants* begin their Bloſſom about the latter End of *July*, and continue Flowering above two Months; they are commonly Cultivated in Pots, as well to give them ſome little Shelter in the moſt ſevere Froſts, as to place them in proper places for Ornament in Houſes, but I am ſatisfied they will grow in open Borders, and thrive very well in ſuch Places. In *April* they may be increas'd by parting their Roots, and ſhould be planted in places expoſed to the *Sun*.

CHAP. VI.

Of the Loweſt kinds of Perennial Flowers.

THE *Plants* which I ſhall treat of in this Chapter are ſuch as are of the ſmalleſt Kinds, and therefore the moſt proper for the outſides of Borders or Garden-

Beds, and to be cultivated in ſmall Gardens; the firſt I ſhall make mention of is the *Primroſe*, and *Cowſlip*, which are by the Gardeners both included in the Name of *Polyanthos*, tho' without Reaſon; for the *Primroſe* bears only one Flower upon a Stalk, but the *Cowſlip* indeed anſwers to the Name by bearing *many Flowers* upon a Stem; but Difficulties of this Nature I hope to ſet to rights ſome other time in a *Botanical Nomenclator*. In the mean while I ſhall treat the Gardener in his own Language.

SECT. I.

Of the POLYANTHOS.

THIS ſort of *Plant* is generally divided by the Gardeners into two Claſſes, *viz.* the *Primroſe* Kind, and the *Cowſlips*. Theſe are again diſtinguiſht by the Terms of *ſingle Flowering*, *double Flowering*, *Hoſe in Hoſe*, *Pentaloons*, and *Feathers*. The *ſingle Flowering* ſorts I need not explain, but take Notice only that their Colours are chiefly *White*, *Yellow*, *Red*, *Purple*, and ſometimes *Violet Colour*, and frequently variegated in their *Flowers*. The *double Kinds* are not above four in Number that I know of, the *Double Hrimroſe*, the *Double Paper White Primroſe*, the *Double Red Primroſe*, and *Double Cowſlip*;

Cowſlip; the *Bloſſoms* of which are full of *Petals.*

THE *Hoſe in hoſe* Kind has its Bloſſoms one in another, without Caſes. The *Pentaloons* have Green Leaves about their Bloſſoms, which are ſometimes variegated with the ſame Colours of the Flowers they encompaſs; and the *Feathers*, which ſeem by Nature to be at firſt deſign'd for *Hoſe in hoſe*, have their Bloſſoms ſo ſplit and curl'd, that they ſomewhat reſemble Bunches of Feathers. Of theſe there are many Varieties which are multiply'd every Year by ſowing their Seeds; the Curious in this way ſow them in *February*, upon a Place prepar'd with Earth taken out of decay'd Willows, often refreſhing the new ſown ſpot with Water, and keeping it ſhaded from the Sun all *April* and *May*, till the young Plants are above Ground. The Seedlings ſo rais'd, will be fit to tranſplant into Beds the *July* or *Auguſt* after they are ſown, the Soil ſhould be ſomewhat binding, and their Expoſure to the Morning Sun; ſo will they be prepar'd to Bloſſom the *March* and *April* following. Theſe Plants may be likewiſe propagated by parting their Roots in *Auguſt*, which is a much better Seaſon for that Work than the *Spring*, altho' it may be done at that Time even when they are in flower. I have obſerv'd that ſuch

Polyanthos's as I have cultivated, began to loſe the Beauty of their Colours, if I let them ſtand two Years without parting, and even then would decline; ſo that I adviſe every one who covets this Plant in Perfection, to ſow them every Year, and tranſplant frequently. The *Primroſe* Kind of theſe, bloſſom cloſe to the Ground; and the *Cowſlips*, about ſix Inches high; both Sorts may be planted near the Edges of Borders, and near Houſes, for the ſake of their pretty Smell.

BUT to leave the Garden a little, I muſt recommend to my Reader the Planting of ſome of the common ſorts, that grow in the Woods, in ſome of the moſt *Rural Places* about his Houſe; for I think nothing can be more delightful than to ſee great Numbers of theſe Flowers, accompany'd with *Violets*, growing under Hedges, Avenues of Trees, and Wilderneſs Works.

SECT. II.

Of the AURICULA.

THIS Flower above all other has been the Pride of the Gardeners, and was ſo much in Eſteem ſome few Years ago, that I have known one Root of it ſold for Twenty Guineas; but that was indeed when they began firſt to appear in our

Climates. The Art of raiſing them were diſcover'd and became familiar, and the fooliſh Vanity of diminiſhing a Fortune for a Set of Flowers was then lay'd aſide; and now the Collections which were before without Price, may be purchas'd upon reaſonable Terms. Theſe *Flowers* are indeed very delightful, as well for their ſurpriſing Varieties, as the Fragrancy of their Smell; they bloſſom in *April*, and are in the height of their Bloom about the 20th of that Month; they blow commonly about ſix Inches high. The numerous Varieties of theſe Flowers are all diſtinguiſh'd by the Names and Titles of Great Men; and I have often thought of a pleaſant Expreſſion of a Friend of mine concerning theſe Flowers and their Extravagant Prices, *That the* Auricula's *increas'd ſo faſt, and the Great or Wiſe Men decreas'd ſo faſt, that in a ſhort time this Tribe of Plants would want Men of Note to take their Names from.* But if it is poſſible for us to admire the Beauties of this Flower, when we may raiſe them with little Trouble and a Moderate Expence, my Reader may ſupply himſelf with them by following the Directions I ſhall here lay down for their Culture; and that he may be a right Judge of what are good among them when they come to blow, I ſhall preſent him with a Table of their ſeveral good Qualities requir'd by the skillful Floriſts. A good *Auricula* ought to have the following Excellencies; *Firſt*, That the *Flower-ſtem* be ſtrong and ſubſtantial; *Secondly*, The *Foot-Stalks* of the *Flowers* muſt be ſhort, and capable of ſupporting the *Bloſſoms* upright; *Thirdly*, That the *Pipe* or *Neck* of each *Flower* be ſhort; *Fourthly*, That the *Flowers* be large and of a regular form; *Fifthly*, Their *Colours* ſhould be bright and well mixt, *Sixthly*, That the *Eye* be *large*, *round* and of a good *White*; and *Laſtly*, That the *Flowers* ſpread themſelves flat, and be no ways inclinable to *Cup*,

WITH theſe Perfections we may account an *Auricula* to be good, and from ſuch only we ought to ſave Seeds for ſowing and propagating others, if we hope for Succeſs; and as a help to our deſign let us conſult the Chapter relating to the Generation of *Plants*, and improve the Variety by placing ſuch *Flowers* as are of the moſt different Colours together whilſt they are in *bloſſom*; that ſo the *Seed-Veſſels* of the one may receive the *Duſt* of the other, and by that means give us an agreeable Mixture of Colours in thoſe *Plants* we raiſe from Seed; and it would be well worth our Enquiry, whether the Seeds thus Impregnated partake more of the Shape or of the Colours of the *Flowers* of the Mother *Plant*; to be certain of which, the *Plant* you make Tryal of muſt be caſtrated of its *Apices*, before they are ripe or burſt open.

THE Seeds of this *Flower* ſhould be gather'd ſo ſoon as the Flower-ſtem is Yellow, and the Seed Veſſels come to their full growth: in the ſaving and preſerving of theſe Seeds, as well as all others, I would adviſe, that the whole *Truſs* or *Bunch* of Seed Veſſels be gather'd with the Flower-ſtem, and remain upon it till the Time of ſowing; for certainly nothing contributes more to the ſtrength and Vigour of Plants to be rais'd from Seeds than a right Method of preſerving ſuch Seeds till the time of ſowing, and what can better inſtruct us in that Method than Nature it ſelf. Here I ſuppoſe ſome People will find fault with my Advice, and be apt to ſay, that if the *Stems* of the *Auricula's* with their Seed Veſſels had remain'd upon the *Plant*, the Seeds would have fallen to the Ground, as ſoon as they had been ripe, and where is then my Argument that Nature would keep them cas'd all the Winter, as I propoſe to do from her Example.

TO theſe I anſwer, that the *Seeds* of *Vegetables* are like the *Eggs* of *Fowls*, which after they are Perfected in the *Matrices* of either, will only keep good a certain time before they ought to be *Set* or be put into a proper Poſture for hatching; the Seeds which fall to the Ground are nouriſh'd by the Earth they fall upon, till the proper Ferment begins for their *Vegetation.* And if they are kept in their Cells till a proper Seaſon for ſowing, it is very reaſonable to believe they will find there a natural Nouriſhment; ſince it is known, that they were perfected from the ſame *Juices* in the ſame *Cells*, and that were they to lie dry in a Chamber for ſix Months, without either Earth or their own natural Nouriſhment to feed from, they muſt certainly loſe their Strength, altho' perhaps they may not entirely decay, But to proceed, the *Seeds* of the *Auricula* ſhould be gather'd in a dry Morning as I have directed, and laid upon Sheets of Paper in ſuch places where three Hours Sun may paſs over them every Day for near a Month, till they are out of danger of growing mouldy, then may they be laid by in a dry Place, till the firſt Week in *February*, at which time the *Seeds* may be *clean'd* out and ſown in the following manner.

PREPARE a Box of *Oak* or *Deal* four Foot long, two Foot wide, and ſix Inches deep, with holes in the bottom ſix Inches diſtant from one another. In this Box lay two inches thick of *Cinders* of *Sea Coal*, and over them ſpread ſome fine ſandy Loam the depth of three Inches, over which ſift ſome Earth taken out of hollow *Willow Trees*, till the Box is full, and then ſow the Seeds on the top without any Covering of Earth, only preſſing them into the *Mold* with a Piece of flat Board to ſettle them below the Edges of the Box, that in Watering the light Seeds may not float over the Brims; this Seminary muſt be continually refreſh'd with Water, ſo that it never be dry, for without a conſtant Moiſture the *Seeds* will not come up. It is neceſſary to cover the whole with a Net to prevent the Birds from deſtroying the *Seeds*; and likewiſe to acquaint the Gardener, that from the time of ſowing to the beginning of *April*, the Box ſhould be ſo placed as to receive the Heat of the Sun, but after that time ſhould be removed into ſome ſhady Place, leſt the young ſeedling *Plants* be ſcorch'd and wither'd away. But if it ſhould ſo happen thro' the Neglect of Watering, that the Seeds do not come up the firſt Year, let the *Caſe* be preſerv'd till the Year following, and there will certainly be a good Crop, as I have often experienced.

THE Seedlings will be ſtrong enough to tranſplant the *July* or *Auguſt* after they appear above Ground, they ſhould then be planted about four Inches

diſtant

diſtant from one another, in Beds of light Earth well ſifted, where if poſſible they may only enjoy the Morning Sun, and it will be neceſſary to ſhade them even from that Warmth for a Fortnight after Planting. The *April* afterward, you may expect ſome of them will begin to ſhew themſelves, and then as they anſwer the good Qualities I have mention'd, tranſplant them into Pots fill'd with any one of the following Soils.

Firſt, TO half a Load of Sea-Sand, add one Load of Loamy Soil, and one Load of Melon Earth, let all theſe be well mix'd and ſifted together.

Second Earth, TAKE one Load of ſandy Loam, to which add the like Quantity of Melon Earth, mix and ſift them together.

Third Earth, TAKE of rotted Wood, or the Bottom of a Wood-pile, one Load, to which add the ſame Quantity of Loam, and half a Load of Melon Earth prepared as the other Earths.

I have already hinted, in the firſt Part, but I ſhall once more take Notice, that all mix'd Soils or Compoſts ſhould lie ſome time for the ſeveral Parts to incorporate with one another before they are uſed. The three ſorts I have here ſet down have been made uſe of by ſeveral Gardeners with Succeſs, I ſhall not pretend to ſay which is the beſt, for I have ſeen *Auricula's* blow well in each of them, therefore ſhall leave my Reader to pleaſe himſelf. I think there remains little more for me to ſay, concerning this *Flower*, than to take Notice of the Method commonly uſed in the Blowing them, which is thus. Set your Pots upon Shelves, one above another, in ſuch a Part of the Garden where the Morning Sun may only come at them, and as theſe *Flowers* are commonly cover'd with a ſort of *Duſt* which contributes in great Meaſure to make them Beautiful, ſome Covering muſt be provided for their Shelter againſt Rains which are apt to waſh it away, and deſtroy their Colours. The Seaſon for parting their Roots are either when they are in *Flower*, or about St. *James*'s Tide, but the latter is judg'd to be the beſt. And now I ſhall conclude this Section of the *Auricula's*, with a Word or two of Advice to the Curious Floriſt, that he obſerve to keep them from much Wet in the Winter, often taking away their rotted *Leaves*, and that he does not let the firſt Week in *January* paſs (if the Weather will permit) without taking the decay'd Earth from about the Roots of his *Flowers*, and filling up the Pots with freſh, from his Heap of prepared Soil. By which Means his *Plants* will be ſtrong againſt their Flowering Seaſon.

SECT.

SECT. III.

Of the BLACK-HELLEBORE *or* CHRISTMAS-FLOWER.

OF theſe *Plants* there are reckon'd three Sorts among the Gardeners, which are all *Dwarfs*, and very proper for ſmall Gardens, ſeldom Bloſſoming above half a Foot from the Ground; the moſt forward Blower of them is the *Black-Hellebore* with the *White Flower*, which begins to Bloſſom about *Chriſtmas*, and continues till *February*: The ſecond Sort is that with a *Green Flower* Bloſſoming about the ſame Time; and the third Sort has a ſmall cut Leaf almoſt like *Fennel*, and bears a *Yellow Flower* in *May*; all theſe are propagated by parting the Roots in *September*, and delight in a ſandy Soil and Shade. I have indeed taken off their Off-ſets, and planted them when they were in Flower; but Autumn is much better. As yet, I have not ſeen any ripe Seeds of theſe *Plants*; but I ſuppoſe it was for want of examining them at due Seaſon; if they bear any, as I am pretty well aſſured they do, the proper Seaſon of ſowing them is ſo ſoon as they are ripe. Every one of theſe ſorts is ſo rare, that they are hardly to be met with, unleſs at Mr. *Fairchild's* at *Hoxton.*

SECT. IV.

Of the GENTIANELLA.

THIS *Plant* is one of theloweſt Race; I have ſeen but one ſort Cultivated in our *Engliſh* Gardens, altho' there are many Varieties of it frequently found in the *Dutch* Collections, and thoſe of Neighbouring Countries; the *Flowers* of that Kind which is known to us, almoſt touch the Ground, but are, notwithſtanding their Humility, as great an Ornament to a Garden as any Flower I ever ſaw; their *Bloſſoms* open in *April,* and alſo frequently appear in *November* and *December* if the Weather be open; their admirable *Blue* Colour is hardly to be imitated by *ultra Marine* it ſelf. This *Plant* delights in a ſandy Soil; where it will put forth many *Slips,* which may be either parted from the Root in *March,* or *Auguſt.*

SECT. V.

Of the HEPATICA.

THE *Hepatica* is of ſeveral Kinds, *viz.* that with the ſingle *White* Flower, the ſingle and double *Peach Colour'd* Flowers, and the ſingle and double *Blue*

Flowering-kinds; thoſe with the ſingle Flowers begin their Bloſſom in *January*, if the Weather be open, and the double Flowering ſorts *blow* a Month later; they are encreas'd by parting their Roots either in *April* or *September*, and will only thrive in a light ſandy Soil.

SECT. VI.

Of the VIOLET.

THERE are ſeveral ſorts of *Violets* commonly Cultivated in Gardens; the moſt common of them are the ſingle *Blue* and *White* Kinds, the more rare are the double *Blue*, the double *White*, and that ſort with *Variegated Leaves*; all theſe Kinds blow in *March*, and beſides their Beauty, perfume the Air with a moſt delightful Odour. The ſorts with double *Flowers* Bloſſom alſo in *Autumn*, if their Roots are ſtrong. Theſe *Plants* may be increas'd by tranſplanting their *Runners*, which will of themſelves take Root at every Joint without any Art.

THE proper Seaſon for this Work is either in *February* or *September*, but the laſt is the beſt. Theſe ſhould be planted among *Primroſes* and *Cowſlips* under Hedges, and the moſt rural Places of the Garden, or near the Edges of Garden-

Beds; they delight in binding Soil and ſhady Places.

SECT. VII.

Of the DASIES.

THE *Daſy* is one of the ſmalleſt *Plants* that grows, its Flowers blowing about three Inches from the Ground. The ſorts commonly known and cultivated in Gardens are, the *Double Red*, the *Double White*, the *Double Red* and *White*, the *Coxcomb* or *Rainbow Daſy*, and the *Hen* and *Chicken Daſy*; the laſt of theſe has little *Stalks* of *Flowers* growing out of the main Bloſſoms; beſides theſe, I have ſeen near fifty different ſorts which were rais'd from Seed in one Year by Mr. *Fairchild* at *Hoxton*, which I ſuppoſe were produced from the Coupling of the *Mother Plants* one with another; for which Reaſon I would adviſe every curious Gardener to ſow the Seeds of his beſt *Daſies*, that have ſtood near enough to couple about *Auguſt*, or early in the Spring, that he may furniſh himſelf with Varieties. Theſe *Plants* are encreas'd by parting their Roots either in the *Spring* or *Autumn* Seaſons, and love a binding Soil. They make pretty Edgings for *Flower-Beds*.

SECT. VIII.

Of THRIFT *or* SEA-GILLYFLOWER.

I Have had three ſorts of *Thrift*; the *Common*, the *Scarlet-Flowering* Sort, and that with the *White Flower*. Theſe are only proper for Edging of large Borders in long Walks, or the moſt rude Parts of Gardens; they Bloſſom in *May*, and continue a long time in *Flower*. We may propagate them from *Slips* in *Auguſt* or *March*, they love a ſtrong Soil. *N. B.* The *Sea-Pinks* make good Edgings for long Walks, and may be propagated after the ſame manner as the former.

I have now given my Reader an Account of all the *Perennial Plants*, which I think are worthy of our Care in Gardens; and ſhall now proceed to give proper Directions for the Culture of the next degree of *Hortulan Plants* with *Bulbous Roots*.

CHAP. VII.

Of BULBOUS *or* ONION-*rooted Plants*.

ALTHO' a BULB is properly ſuch a Root as is round and ſucculent, made of many *Tunics* wrapt over each other, like the Root of an *Onion*; yet according to the Gardeners I ſhall comprehend under the Title of *Bulbous-rooted Plants*, the *Anemonies* and *Ranuncula's*, tho' their Roots differ from the Shape I have deſcrib'd a *Bulb* to be of. I deſign in this Chapter to ſpeak firſt of thoſe *Bulbs* or *dry Roots* (as they are call'd by ſome) which are commonly taken out of the Ground every Year as ſoon as their *Stalks* are decay'd.

SECT. I.

Of the TULIP.

THE *Tulip* wants nothing (in my Opinion) but a grateful Scent to make it the fineſt Flower in the World; there are infinite Varieties of it vaſtly different from each other, which diſplay their Beauties, and eclipſe the Glories of all other *Plants* of the Garden; theſe Ornaments of Nature are as kind as they are beautiful, ſome or other of them Bloſſoming from *March* to the latter end of *May*. They are divided into two *Claſſes, viz.* the *Præcoce Tulips*, or early Blowers, and the *Serotine* or later Blowers; and theſe may be diſtinguiſh'd by their *double* and *ſingle Flowers*. Again with reſpect to their Colours and Stature, they have other Denominations, as *Bagats*, which are the talleſt Blowers, commonly *Purple* and *White Marbled*;

Secondly, *Agates*, which grow ſhorter than the former, whoſe Flowers are vein'd with two Colours; and *Thirdly*, *Beazarts*, which have four Colours, tending to *Yellow* and *Reds* of ſeveral ſorts. The Varieties of theſe kinds are ſeverally diſtinguiſh'd by the Names of Cities, or ſuch like Characters: The good Qualities of *Tulips*, which the Gardeners generally approve of, are the Beauties of their *Colours*, the ſtrength and Height of their *Flowerſtems*, and that their Flowers be of the ſhape of an *Egg* without ſharp Points on the top of their *Petals*; but above all their Novelty.

I have often wonder'd at the Extravagant Prices, which has been, and even at this day is given for theſe Flowers in *Holland* and *Flanders*, when every Year produces ſo many new Varieties; there are indeed the beſt in thoſe Countries that I have ever ſeen, but I believe if we in *England* took the right way for their Management, we might ſoon boaſt of our good Succeſs, and propagate great Numbers of them at a very Cheap Rate. For this end I ſhall ſet down ſome Tryals I have already made, and offer ſome reaſonable Conjectures, which may yet farther contribute to their Improvement.

THE Method of raiſing them from Seeds is what I ſhall firſt offer to my Reader.

The *Flower-ſtem* being left remaining upon the Root will perfect their Seeds about *July*, which will be fit to gather when the *Seed-Veſſels* begin to *crack* or burſt open. They ſhould then be cut cloſe to the Ground in a dry Day, and laid in ſome dry Place till *September*, which is the moſt proper Seaſon for ſowing them, and the following Spring they will come up, if they are kept under ſhelter. The firſt Year their Roots will be no bigger than *Wheat-Corns*, but after their ſecond appearance above Ground they may be taken from the *Pot* or *Caſe* they were ſown in, and ſow'd or ſprinkled over a Bed of Natural ſandy Soil well ſifted, where the thickneſs of half an Inch of the ſame Earth ſhould be ſpread over them; thus may they remain without any other Culture, than adding half an Inch of Earth for their covering every Year till they begin to blow, which will be in five or ſix Years after ſowing. But let no Man be diſcourag'd at the length of time they lie in the Ground without Flowering, the *Plant* will anſwer his Expectation; let him ſow every Year, and he will gain new Varieties ſucceſſively, when his firſt Seminary begins to blow. I have known many fine *Tulips* rais'd by this means, but have once heard of a large Bed of *Seedlings*, which were only of plane Colours without Variegations, but that might happen from the Qualities of theſe Flowers which the Seeds were ſaved from. But however, if by chance our young Nurſery ſhould prove all of them plain Flowers, we are not yet without hopes, the Plainneſs of their Colours I ſuppoſe to proceed from a Strength of Nature, as we are ſure the Variegations of all Flowers are the Effects of Weakneſs and want of Nouriſhment; for whoever has cultivated thoſe ſorts of *Tulips* which are call'd *Breeders* muſt know they are of plain Colours, and are always large tall blowing *Flowers*; 'tis from thoſe *Breeders* are commonly produc'd the *Flowers* of the greateſt Value for their Stripes ſake; now and then one of hem breaking (as they term it) into beautiful Mixtures of Colour or Variegations. This Alteration of *Tulips* is reckon'd by the Gardeners to be the Effect of Chance; but I believe the two following Obſervations will explain the Myſtery. Near *Bruxeles*, a Man is famous for a little Spot of Ground, in which by ſome ſtrange Virtue (as is reported) theſe *Breeding Tulips* change themſelves into fine variegated *Flowers*, inſomuch that their Roots are brought thither from ſeveral parts, to be Educated and brought up for the niceſt Collections, and Money given for their ſtanding. In that place it is rare if three in five do not break into Stripes, the firſt Year after they are planted; but this Alteration I think may be accounted for, by examining the Soil, which is nothing but common Rubbiſh ſifted; or at moſt there is not one twentieth part of it Natural Soil.

IT is very plain that a Soil of this Nature muſt Impoveriſh the Roots that are ſet in it, and conſequently the *Flowers* muſt ſome way or other ſhew the Diſtemper of the Roots from whence they ſpring. And to continue the Variegations of *Tulips*, they are taken out of the Ground every Year as ſoon as they have done blowing; for if they were always to remain in the Earth, they would in time become plain Flowers. But *Secondly*, the other Obſervation I have made concerning the ſtriping of theſe *Flowers* was in a Gentleman's Garden near *London*, who planted a Bed of *Breeding Tulips*, and the following Year, when they came to Blow, he found a fine ſtrip'd *Tulip* at each Corner of the Bed, and none of the others were any ways alter'd; this I ſuppoſe happen'd from four large *Piramid Yews*, which then grew at the ſeveral Corners of the Bed, and had exhauſted the Natural Strength of the Soil about 'em. I ſhall therefore recommend theſe Obſervations to the ſerious Conſideration of every ingenious *Floriſt*. And now ſuppoſing that

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by theſe or any other means a Gentleman is ſtock'd with a good Collection of Rarities of this Sort, I ſhall proceed to acquaint him of the proper Method of planting and cultivating them; and firſt of the Soil.

IN *Holland*, where I have ſeen the fineſt Collections of this ſort of *Flower*, the Soil is naturally *Sandy*, as near as I can judge, about two parts in three of *Sea-Sand* to one of common black Earth; in this Soil I have ſeen of the *Bagett* kind of *Tulips* bloſſom above three Foot high, and the other Sorts in proportion. The Curious in that Country always obſerve two things in planting their *Tulips*; the firſt is, to Plant all the forward Blowers in a Bed together, and when they Plant the late *Flowering* kinds, they place the talleſt Sorts in the middle Line of the Bed, and of each ſide of them ſet two rows of the ſhorteſt Blowers; the Seaſon for putting in theſe Roots is from the laſt Week in *Auguſt* to the end of *September* if the Weather be fair, and after that they need no Shelter till *March* that the Flower Buds appear, and then they ought to be defended from Blights with Matts or painted Cloth ſtrain'd upon Hoops, which *Covering* ſerves alſo for ſheltering the *Flowers* when they are blown, from Rain and the ſcorching Heat of the Sun, either of which would quickly ſpoil the

Bloſſoms. Theſe Roots are alway taken out of the Ground, as ſoon as their *Flower-ſtems* begin to decay, and being well dry'd are laid up in Paper, till the planting Seaſon returns.

N. B. The beſt *Bagett-breeders* are call'd *Bagett Primo's*, and are ſold in *Holland* now for five Pounds *per Hundred.* Theſe *Flowers* are increas'd from Off-ſets which grow about the Roots.

SECT. II.

Of the RANUNCULUS.

THE *Ranunculus*, next to the *Tulip* is deſirable for its Beautiful *Flowers*; there are many Varieties of it brought from *Turkey* every Year, ſo that the Names of every Sort now known in *England* would rather be troubleſome than inſtructive to my Reader. The beſt way will be for him to take a View of the ſeveral curious Collections of them in the Gardens about *London*, when they are in Flower; however that he may be the better appriſed of what I deſign to treat of in this Section, I ſhall deſcribe ſome few ſorts of them. The *Ranunculus* bears its Bloſſom in *April* and *May* upon Stalks about ſix or eight Inches high; the *double Flowering* kinds are crowded with *Petals* after the manner of the *Province-roſe*

Flowers, and ſome of them as large; the Colours of thoſe *Ranunculus*'s I have ſeen are deep *Scarlets* vein'd with *Green* and *Gold* Colours, *Yellow* tip'd with *Red*, *White* ſpotted with *Red*, *Orange* Colours, plain *White*, *Yellow* with *Black*, and one ſort of a *Peach* bloom Colour; which yet I have only ſeen at Mr. *Blind*'s at *Barns* in *Surry*. The ſingle kinds blow ſomewhat taller than the others, and are commonly Variegated with pleaſant Colours; all theſe are increas'd by Off-ſets found about the Roots when they are taken up, and may likewiſe be propagated from *Seeds* ſaved from the ſingle Kinds and Semi-doubles; but as they rarely ripen in *England*, we have hitherto been beholding to the *French* for them, The proper Seaſons for ſowing the Seeds of this *Plant* is the latter end of *Auguſt*, and the Soil which they moſt delight in is *rotted Leaves*, or ſuch Soil as may be taken from the Surface of the Earth in Woods or Groves of long ſtanding.

TANNERS-BARK, or the bottom of a *Wood-pile*, are likewiſe very proper Earths for theſe *Flowers*, if they are well ſifted and mix'd with one third part of Natural Soil. Theſe *Plants* are ſomewhat tender and require ſome Shelter in the Winter; eſpecially if they have began to ſpring before the Froſts. The Seedling *Plants* come up the Spring after they are ſown, and bloſſom the ſecond Year; when they are out of *Flower*, and the *Stalks* and *Leaves* are decay'd, their Roots ſhould be taken out of the Ground, and being well dry'd in the Sun muſt be preſerv'd in dry Sand till the latter End of *September*, which is the beſt time for re-planting them, if the Ground be not over wet.

SECT. III.

Of ANEMONIES.

OF this Kind of *Plant* there are many Varieties, as well with *ſingle* as with *double Flowers*. Their Colours are chiefly *Reds*, *Blues*, and *Purples*; their Bloſſoms, which are ſeldom above five or ſix Inches from the Ground, open themſelves about *April*, and if the Roots are ſuffer'd to remain in the Earth, they will again repeat their *Flowers* in *September*, and continue blowing the greateſt part of the Winter; but it is ſeldom that the Gardeners will leave any of their choice *Anemony* Roots in the Earth, after their Spring Bloſſom is over, leaſt they decay by too much Wet, which is frequent enough in our Climate in the Summer Seaſon. The Roots of theſe *Plants* ſhould be taken out of the Ground, and preſerv'd and replanted, like thoſe of the *Ranunculus*, with this Difference only, that *Anemone* Roots ſhould be increas'd by breaking the *Knots* aſſunder, which are about the Bigneſs of a ſmall Button, and Planting them after they have laid two or three Days in the Sun. Theſe *Flowers* love a a ſandy Soil without any Mixture; chiefly ſuch as is found about *Baterſea* in *Surry*; where they blow very large. The Seeds of the *ſingle* Kinds ripen about the latter end of *May*, and ſhould be carefully gather'd as ſoon as they begin to *crack* or ſhow their *Down*, otherwiſe the leaſt Wind will carry them away. From them we may raiſe innumerable Varieties, if they are ſown in *February*, and lightly cover'd with Earth. They blow the ſecond Year after ſowing.

SECT. IV.

Of the JONQUIL, NARCISSUS POLYANTHOS, *and others of the ſame Tribe.*

THE *Jonquil* is a *Flower* generally admir'd for its delightful *Scent*; the *double* Kind bloſſoms in *April*, and that with the *ſingle Flower* ſomewhat ſooner; the *Roots*, which are *Bulbous* like thoſe of the *Tulip*, love a light ſandy Soil and an open Expoſure; they ſhould be taken out of the Ground and replanted like other *Bulbs*; and in like manner ſhould be order'd the *Narciſſus Polyanthos*, whoſe ſweet *ſcented Flowers* are not leſs deſirable than *Jonquils*. Theſe, with all other Kinds of *Narciſſus*, are propagated from *Off-ſets* of their *Roots*. Next to thoſe I have mention'd in this Section, the *double White* and *double Yellow Narciſſus* are worthy our Eſteem; and even the common *Daffodil* is to be admir'd for its pretty Ornament in rural Parts of the Garden. All theſe Bloſſom in the Spring about a Foot high.

SECT. V.

Of the HYACINTH.

THERE are many Kinds of *Hyacinth*, ſome with *ſingle Blue Flowers*, and others with *ſingle White Flowers*, and with *double Flowers* of both thoſe Colours; the *Grape Hyacinth* and *Starry Hyacinth* have alſo their Varieties, all which, as well as the *Hyacinth* of *Peru*, will bear the Severity of our Froſts; all of them, except the laſt, blow early in the Spring, and are moſt of them well ſcented; they are increas'd from *Off-ſets* of the *Roots* planted in *September* in Beds of ſandy Soil, the *Flower-*

ing-ſtems of theſe *Plants*, are ſeldom more than half a Foot high from the Ground.

SECT. VI.

Of the CYCLAMEN *or* SOW-BREAD.

I Have ſeen near thirty ſorts of this *Flower* in the *Amſterdam Gardens*, but in *England* we have not above four ſorts, *viz.* the *Spring*, *Autumn*, and *Winter* blowing Kinds, with *Pink*-colour'd *Flowers*, and the *Sweet-ſcented White-flowering Kind*. The laſt is ſomewhat tender, and rarely found in our Gardens; but the other ſorts, which are hardy enough to ſtand abroad all the Year, are pretty common. Theſe are rather *Turnep-rooted Plants* than *Bulbs*, and are only propagated from *Seeds* ſown as ſoon as they are ripe, which indeed are more like *Roots* than *Seeds*. Theſe *Plants* are Beautiful as well in the Variegations of their *Leaves* as the delightful Colour of their *Flowers*; they love a light Soil, and can only be tranſplanted with ſafety about *Midſummer* when their *Leaves* are decay'd; their Bloſſoms ſeldom riſe above four Inches from the Ground; and we may lay it down as a Rule, that all *Bulbs* may be ſafely tranſplanted when their Leaves and Flowers are decay'd.

SECT. VII.

Of the GUERNSEY-LILLY.

THE *Guernſey-Lilly* has hardly its equal for Beauty, among the Flowering Race; and yet it is rarely found in our Gardens, which may be perhaps for want of a right Knowledge of its Culture. Mr. *Fairchild* of *Hoxton* has this *Plant* Flowering with him every *Autumn*, even from *Off-ſets* taken from the great *Roots*; the *Bloſſoms* are large, and not unlike thoſe of the *Lilly* in their Make; ſeemingly powder'd with Gold-Duſt upon their *Roſe*-colour'd *Petals*. The moſt proper Soil for this *Plant* is two third Parts of Sea Sand to one of Natural Soil, or a light ſandy Earth mix'd with an equal Quantity of Rubbiſh. It will bear the Hardſhips of our Winters, if it be planted in either of the foregoing Soils under a warm Wall; but chiefly, if it be kept dry. The *Flower-ſtems* of this *Plant* are commonly about a Foot high.

SECT. VIII.

Of the GLADIOLUS, FRITILLARIES, *and* IRIS.

THE *Gladiolus* or *Corn-flag* bloſſoms in *May* upon *Stalks* of almoſt two Foot high; the Flowers are of a Roſe Colour, and laſt about ſix Weeks; the laſt time to tranſplant them, is when their Stalks are decay'd. The *Fritillaries* are of ſeveral kinds, Bloſſoming in *April*; their Flowers are chequer'd with two or three Colours, ſometimes *White* and *Red*, others are *Green*, and *Brown* or *Yellow* and *Black*; they are curious *Plants*, and at this time of great Value in *Holland*, where vaſt Varieties have been lately raiſed from Seeds, and are very proper (like other *Bulb*) for *Parterres*. The *Iris* is likewiſe a numerous Tribe, ſome ſorts of them bloſſoming in *April*, others in *May* and *June*; their *Flowers* are of ſeveral Colours, and their Figures different; they are all of them pretty Ornaments for Gardens, and may be increas'd by *Off-ſets* taken from their Roots when their *Stalks* are decay'd. Theſe, like other *Bulbs*, love a light Soil.

SECT. IX.

Of the COLCHICUM, *and* CROCUS.

THE *Colchicum* has a Root ſomewhat like the *Bulb* of a *Tulip*, but its Flower reſembles that of a *Crocus*; there are many Kinds of *Colchicums*; thoſe with *ſingle White*, and *Pink*-colour'd *Flowers*, ſome with *double Pink*-colour'd *Bloſſoms*, and another Kind with *Flowers* chequer'd with *Pink* Colour and *White*: All theſe Bloſſom in *Auguſt* and *September*, about four Inches above Ground; they delight in ſandy Soil, and will only bear tranſplanting about *Midſummer*, when the *Roots* are entirely at reſt. The *Saffron Crocus* blows at the ſame time with the *Colchicums*, bearing *Purple Flowers* of the ſame Height and Bigneſs; this *Plant* is of great uſe (as well as Beauty) for the ſake of its *Piſtillum*, which is the *Saffron* us'd in *Medicine*. I have often wonder'd that this *Plant* is not more commonly Cultivated in our Gardens, ſeeing how Valuable a Comodity it produces; beſides the Pleaſure of its Bloſſoms at a Seaſon when very few Flowers appear. This is one of the laſt kind Offices of the departing Summer and ſhould be taken notice of. The *Leaves* appear ſo ſoon as the Flower is paſt, and remain all Winter, which in the Spring ſhould be ty'd together in Knots to help the Increaſe of the Roots, which will be fit to remove or tranſplant about *Midſummer*. This *Plant* chiefly delights in Chalky Ground, but will proſper alſo in a ſandy Soil. The way of preparing the *Saffron* for uſe ſhould have been inſerted in this Place, but at preſent I have only an imperfect Account of it; and therefore ſhall defer it till ſome curious Perſon in that Art has been pleas'd to communicate to me a more exact Receipt for its Management than what I have now by me, which I ſhall gratefully acknowledge. The ſeveral Kinds of *Crocus* which bloſſom in the Spring are the common *Yellow* and *Black ſtrip'd*, the *Yellow Dutch*, the early and later *Purples*, and the *White* ſort; all theſe Bloſſom about *February* and *March*, and make the beſt Flowering Edgings of the Spring; the *Roots* may be taken out of the Ground in *June* and re-planted with other *Bulbs*. They are increas'd by *Offſets*, and love a light Soil.

SECT. X.

Of the SNOW-DROP, WINTER-ACONITE, DENS-CANINUS *and* ORCHIS, *or* SATYRION.

THE *Snow-drop*, altho' it is a common Flower, ſhould not be wanting in *Parterres*; it is ſo fit a Companion for the *Crocus*, as well in reſpect to its Height as Time of Flowering, that it has been cuſtomary to Plant them together; their Culture likewiſe is the ſame, ſo that one Trouble of the Gardener will ſerve for the Propagation of both; as likewiſe of the *Winter Aconite*, which is alſo one of the firſt Leaders of the Spring, beginning to diſplay its pretty *Yellow Bloſſoms* about the firſt Week in *January*; the *Roots* of this ſort of *Aconite* are not ſo regular in their Shape as the *Bulbs* of the *Crocus* nor ſo miſ-ſhapen as the *Roots* of *Anemonies*, they are ſo ſmall 'tis hard to find them when the Leaf is decay'd. This Kind of *Aconite* will ſoon over-run the Ground where it is planted, as well by ſhedding its Seeds as from *Off-ſets*, which its *Roots* freely put forth; the Flowers of it are never more than three or four Inches above Ground. The *Dens-caninus*, or *Dogs-tooth'd Violet*, is another *Dwarf* like the former, it produces its Bloſſoms in *March* of a *White Colour* ſomewhat tinged with *Purple* like the Bloſſoms of the *Spaniſh Jeſſamine*; this *Plant* muſt be propagated like the others I have mention'd in this Section, and like them loves a ſandy Soil. The *Orchis* has many Varieties which may be found in every Herbal, I ſhall mention only three or four ſorts which are commonly Cultivated by the Curious, ſuch is the *Bee-flower*, the *Fly-flower*, the *Lizard-flower*, and a more common ſort found in Meadows with *Purple Flowers*; theſe ſhould all be removed with Balls of Earth about their *Roots*, juſt when their *Flower-ſtems* begin to appear above Ground; they Bloſſom about half a Foot high in *May*.

I ſhall now conclude this Chapter of *Bulbous-rooted Plants*, with acquainting my

Reader, as a certain Rule which he ought to obſerve, That *Bulbs* are taken out of the Ground every Year, only for the Preſervation of the Variegations of their Bloſſoms, but ſuch as are not admir'd on account of their Stripes ſhould be left ſtanding in the Earth at leaſt three Years, for the Benefit of their Increaſe; and alſo that the moſt ſafe Time of removing *Bulbous Roots* is when the *Leaves* are decay'd.

CHAP. VIII.

Of ANNUAL-FLOWERS, and PLANTS, their Culture and Management in Gardens.

THE *Plants* which I ſhall treat of in this Chapter are of that Nature, that the Method of Culture proper for one or two of them will be ſufficient to inform my Reader of the right way of managing all thoſe which may be comprehended under the Denomination of *Annuals*: In ſhort, the Curious Planter has no more to do, than provide a Hot-bed about *February* or *March*, for the Seeds of the moſt tender Kinds of *Annuals*, and to prepare the Soil of his Natural Garden Beds for the Interring the Seeds of the moſt hardy ſorts about the middle of *March*, and that he may with more eaſe be inform'd of the ſeveral kinds which are now commonly uſed for the Beautifying of Gardens, I ſhall give him an Account in two ſeparate Sections or Tables, of their *Names*, *Stature*, *particular Beauties*, and *times of Flowering.*

SECT. I.

Of ANNUALS *to be rais'd in a Hot-Bed.*

THE *African Marygold* has a large *double Yellow Flower*, blowing above two Foot high, in *May*, *June*, *July*, *Auguſt* and *September*,

II. The *French Marygold* has a ſmaller Flower than the former, *Yellow* intermix'd with *Red* near two Foot high, Bloſſoming from *May* to *September*,

III. *Sweet Sultan*, three ſorts, with *White*, *Yellow* and *Purple Flowers*, they ſmell like Musk, and Bloſſom two Foot high, from *June* to *September*.

IV. *Capſicum Indicum* or *Guiny Pepper*, with long and round Scarlet Fruit, for which it is only admired, begins to make a handſome Show in Gardens about *July*, and laſts till *September*; this *Plant* is about a Foot and half high. The common People in *Italy* Pulveriſe the *Yellow Seeds* contain'd within the *Podds* of this *Plant*, and uſe it inſtead of *Pepper*, and the late Biſhop of *London* frequently eat of it in the ſame way.

V. *Marvel of Peru*, two ſorts, one with *Red* and *Yellow Flowers*, the other *Purple* and *White*, theſe blow from *July* to *September* two Foot high.

VI. *Amaranthus* of ſeveral kinds but the beſt of them are the *Tricolour* and *Cockſcomb*; the firſt is only Beautiful in its *Leaves* which are Variegated with *Scarlet*, *Yellow* and *Green*; the ſecond is admir'd for its *Scarlet Flowers* like *Cocks-combs*. Theſe are Ornamental *Plants* from *July* to *September*, growing about two Foot high.

VII. *Convolvulus*, three kinds, the *Major* with a *Purple Flower*, the *Minor* a *Blue Flower* Variegated with *Yellow* and *White*, and the *Scarlet* Flowering kind; theſe blow from *June* till *Auguſt*, and creep upon the Ground.

VIII. *Female Balſam's*, three ſorts, the *Roſe* Colour, the *Purple* and the *White* kinds; theſe bloſſom about a Foot and half high, from *June* till *September*.

IX. *Belvidere* or *Pyramid-Buſh*, a pretty *Green* without Flowers, about two Foot high.

X. *Buſh Baſil*, a ſmall *Shrub*, about a Foot high, with *ſweet Scented Leaves*.

XI. *Naſturtium Indicum*, or *Indian Creſſes*, two ſorts, one large the other ſmall, has Flowers Variegated with *Yellow* and *Scarlet*, they run upon the Ground, and blow from *May* till *September*.

XII. THE *Senſitive Plants*, two ſorts, one of which is call'd the *Humble Plant* becauſe the *Leaves* of it fall down to the Ground upon the approach of a Man's Hand, and the *Senſitive Plant* curls up its *Leaves* by touching it; theſe two muſt be conſtantly kept under Glaſſes all the Summer.

I muſt beg the Reader's Pardon if I introduce the *Tuberoſe* among the *Annuals* of the Hot-Bed, which every one knows to be a bulbous Plant of *Italy*, but as it is *Annual* with us I hope to be excus'd; the *Roots* of it muſt be planted in the Hot-bed with the other *Plants* of this Section, and muſt be kept from Water till the *Leaves* begin to put forth. In *July* and *Auguſt*; their Flowers appear upon *Stems* of three Foot high, which afford a moſt agreeable Scent.

FOR the more particular Management of the *Plants* I have here mention'd, my Reader muſt take notice, that when the Seeds are come up, the young *Plants* ſhould be tranſplanted at four Inches diſtance from each other, and ſhould not quit the Hot bed till the ſecond Week in *May*; they will then bear the Air of our Climate, if they have by degrees been uſed to it.

SECT. II.

Of ANNUAL PLANTS *to be ſown in the Natural Ground.*

THE Seeds of thoſe Flowers I ſhall treat of in this Section muſt be ſown in the Natural Earth in *March*, on the very Places where they are to blow, whether for Standard *Plants*, or in Spots, or for Edgings.

The *Annual Sun-flower* bloſſoms from *June* till *Auguſt*, with large *Yellow* Bloſſoms upon *Stems* of ſix Foot high.

II. The *Larks-heel* ſhould be ſown in Spots, it blows with ſeveral Colours upon *Stems* of three Foot high, from *June* till *Auguſt* or *September*.

III. *Flos-Adonis*, ſown in Spots, blows a Foot high in *June* and *July*, with ſmall *Crimſon Flowers*.

IV. *Nigilla Romana* bloſſoms in the ſame Month with the former, it bears a *Blue* Flower, about a Foot and half high.

V. *Garden Poppys* ſhould be ſown in Spots, their Colours are various, and their Flowers very beautiful, but not laſting; they appear in *May* and *June* upon *Stalks* about two Foot from the Ground.

VI. The *Dutch Poppy*; this does not blow ſo high as the former, its Flowers are *Red* and *White* ſtrip'd, bloſſoming from *June* till *Auguſt*.

VII. *Cyanus*, or *Annual Bottles*, are of ſeveral Colours, bloſſoming in *June* and *July* upon *Stalks* of a Foot and half high.

VIII. *Lupines*, three ſorts, the great *Blue*, ſmall *Blue* and *Yellow* Flowering Kind; all theſe bloſſom in *May* and *June*; the firſt about two Foot high, and the others little more than half that Height; the *Yellow* have a pleaſant *Scent*.

IX. *Scarlet-beans* are twining *Plants*, bearing Knots of *Scarlet Flowers* from *May* till *September*.

X. *Everlaſting Flowers* ſown in Spots bloſſom abour a Foot and half high in *June*, *July* and *Auguſt*, their Flowers will remain freſh for many Years after they are gather'd, and are *dy'd* of ſeveral Colours by curious Perſons for Flower-Pots in the Winter.

XI. *Wing'd Peas*, ſown in Drills for Edgings, have pretty *Crimſon* Bloſſoms, blowing about ſix Inches high in *May* and *June.*

XII. *Annual Stocks* for Edgings, or ſown in Spots, bloſſom in *May* and *June*, bearing their Flowers of a *Pink* Colour, about ſix Inches high.

XIII. *Venus Looking-Glaſs* is proper for Edgings, or to be ſown in Spots; it bloſſoms the ſame Height, and at the ſame Time with the former, bearing Flowers of a *Violet* Colour.

XIV. *Venus Navelwort* has *white* Flowers, is a pretty *Dwarf Plant* fit for Edgings or Spots, and bloſſoms alſo with the foregoing *Plant.*

XV. *Candy Tufts* are of two ſorts, one with *White*, the other with *Red* Flowers; they are both proper for Spots, or Edgings, and flower with the former.

XVI. *Hearts-eaſe*, or *Viola tricolor*, has its Flower variegated with *Purple*, *Yellow* and *Red*, it is a *Dwarf* like the laſt, and makes pretty Edgings. This alſo bloſſoms in *May* and *June.*

I have now no more to do than to remark, that all the *Annuals* I have mention'd in this Section will blow ſooner or later as their Seeds are put into the Ground, and I would adviſe the Curious to ſow ſome of their Seeds in every one of the Summer Months, if they would have them ſucceed one another in Flowering; but the *Dwarf* kinds eſpecially.

I ſhall here give him a Deſign of a Garden-bed divided into five Part, * the Middle Line A is proper for the talleſt *Plants* mention'd in this Treatiſe, the Lines B B for the Middle *Plants*, and thoſe mark'd C C for the Loweſt; in all which Diviſions of the Bed, he ſhould contrive to allott one third Part for *Perannual Plants*, one third for *Bulbous-rooted Plants*, and the like Proportion for *Annuals*, conſidering at the ſame time what Months in the Year each *Plant* will bloſſom in, and aſſort them in ſuch manner that all do not Flower together, or at one time, but that an agreeable Mixture of Flowers may continually be found in the Garden, ſucceeding one another ſo long as the Seaſon will permit, and this he may eaſily perform by the Aſſiſtance of theſe Papers.

SUBJECTS of this Nature cannot be more eaſily divided than in the Method I have followed, and in the next and laſt Part I propoſe to treat of the Improvements of *Fruit-Trees*, *Kitchen-Gardens*, and *Green-houſe Plants*, all which I ſhall advance ſomething New upon, and muſt repeat the ſame Deſire I have before done to the *Curious*, to Communicate the Obſervations that fall in their way upon the particular Parts of *Planting* and *Gardening*.

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* Fig. II. of the third Plate.

FINIS.